

SEQUENCE LISTING

(1) GENERAL INFORMATION:

(i) APPLICANT:

- (A) NAME: ZENECA LIMITED
(B) STREET: 15 STANHOPE GATE
(C) CITY: LONDON
(D) STATE: LONDON
(E) COUNTRY: UNITED KINGDOM
(F) POSTAL CODE (ZIP): W1Y 6LN

(ii) TITLE OF INVENTION: GENETIC CONTROL OF FRUIT RIPENING

(iii) NUMBER OF SEQUENCES: 57

(iv) COMPUTER READABLE FORM:

- (A) MEDIUM TYPE: Floppy disk
(B) COMPUTER: IBM PC compatible
(C) OPERATING SYSTEM: PC-DOS/MS-DOS
(D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)

(v) CURRENT APPLICATION DATA:

APPLICATION NUMBER: GB PPD

(2) INFORMATION FOR SEQ ID NO: 1:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 785 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

(B) CLONE: U-U9

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

45	CGGCACGAGG AAAA ACTANG TGAGAANGAG ATAATCGTTG ACCGAGGNAG AGAATGGCGA	60
	GCGAGAAGAG CAAAATCCTG ATCATCGGGG GCACCGGGTA CATCGGCAAG TTCATCGTGT	120
50	TTGCGAGCGC CAGGTTAGGT AACCTACCT TCGTCTCGT CCGGAGCACC ACCGCCCCCG	180
	CCGGCCAACC CGAGAAGGCC AAGCTCCTGA GCGACTTCCA GGCCGCCGGC GTCACCCTCG	240
	TCCAGGGGGA TATNTATAAC CACGAGAGTC TGGTTAAGGC GATCAAGCTG GTGGATGTGG	300
55	TCATCTCCCC CGTCGGCTTC GGGCANCTGA NTGATCAGAC CAAGATCATC GACGCCATCN	360
	AANAAGCCGG AGGACACATC AAGAGGTACC TTCCATCGGA GTTTGGCAAC GACGTANACC	420
60	GAAGCCATGC TGTGGAGCCA GCAAAGTCTA CCTTTGTCTG CAAGCAACAA ATCANAAGGG	480
	CTGTTGAGGC ATCGGGTNTC CCTTACACCT TTGTATCTTC CAACTTTCTT CGGTGGGTNT	540
	TTCCTCCCGG TATTATGACA GGCAGGAGCC ACTGGTCCTC CCACGGACAA GGTGTGCATC	600
65	TTAGGTNACG GGAACNCAA ACGATCTTCT CNATGAANAC GACTTCCGGA CATCCCATT	660
	ANTCTTGGAT GATCCATAAC CTGAACCAGG TTCTATTTCT TAAAACTTCC NCCACTTCTT	720
70	NTCTCTTANC ANCTCNTTTC CCTCTTGGA AAAAAATGTC NNCTANACTT CNAAAAGGGT	780
	TTANT	785

(2) INFORMATION FOR SEQ ID NO: 2:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 813 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-U17

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

CGCGCACGAG GAAGAAAAC AGGTGAGAAN GAGATAATCG TTGACCGAGG NAGAGAATGG 60
CGAGCGAGAA GAGCAAAATC CTGATCATCG GGGGCACCGG GTACATCGGC AAGTTCATCG 120
TGTTTGCGAG CGCCAGGTTA GGTAACCCTA CCTTCGCTCT CGTCCGGAGC ACCACCGCCC 180
CCGCCGGCCA ACCCGAGAAG GCCAAGCTCC TGAGCGACTT CCAGGCCGCC GCGGTCACCC 240
TCGTCCAGGG GGATATATAT AACCACGAGA GTCTGGTTAA GGCGATCAAG CTGGTGGATG 300
TGGTCATCTC CCCCGTCGGC TTCGGGCANC TGANTGATCA GACCAAGATC ATCGACGCCA 360
TCAAAGAAGC CGGAGGACAC ATCAAGAGGT ACCTTCCATC GGAGTTTGGC AACGACGTAN 420
ACCGAAGCCA TGCTGTGGAG CCAGCAAAGT CGACCTTTGT CGTCAAGCAA CAAATCANAA 480
GGGCTGTTGA GGCATCGGGT ATCCCTTACA CCTTTGTATC TTCCAAC TTCGGTGGGT 540
NTTTCCTCCC GGTATTANGA CAGGCAGGAG CCACTGGTCC TCCCACGGAC AAGGTTGTCA 600
TCTTANGTGA CGGGAACACA AAAGCGATCT TTCTCAATGA ANACACATCC GGACNTNCAC 660
NATTAAAGCA GTGGATGATC CGAAAACCTG AACANGTTCT ATATCTGAAA CCTTCGCCCA 720
CTCTTGCTCT ATNACAATC ATTTCCCTCT GGGAAAAAAA NGTCNGCAA ACTCCNAAAA 780
GGTCTACTTC CCGGAAGAAA AATCTGAANC ANA 813

(2) INFORMATION FOR SEQ ID NO: 3:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 746 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-U66

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

GGCAGGAGG GAAAAGGAGA TNATCGTTGA CCGAGGAGAG AATGGCGAGC GAGAAGAGCA 60
AGATCCTGAT CATCGGGGGC ACGGGGTACA TCGGCAAGTT CATCGTGTTC GCGAGCGCCA 120
GGTTAGGTAA CCCTACCTTC GCTCTCGTCC GGAGCACCAC CGCCCCCGCC GGCCAACCCG 180

AGAAGGGCAA GCTCCTGAGC GACTTCCAGG CCGCCGGCGT CACCCTGGTC CAGGGGGATA 240
TATATAACCA CNAGAGTCTG GTTAAGGCGA TCAAGCTGGT GGATGTGGTC ATCTCCCCCG 300
5 TCGGCTTCGG GCAGCTGAGT GATCAGACTA AGATCATCGA CGCCATCAAA GAAAGCCGGA 360
GGACACATCA AGAGGTACCT TCCATCGGGA GTTTGGCAAC GACGTANACC GAAGCCATGC 420
10 TGTGGAAGCC ANCAAAGTCG ACCTTTGTCTG TCAAGCAACA AATTANAAGG GCTGTTGAGG 480
CATCGGGGAT CCCTTACACC TTTGTTATCT TCCAACCTCT TCGGTGGGTA TNTCCTCCCC 540
GTATTGGGAC AGGCANGAAC CACTGGTCCT CCCACGGAC AAGGTTGTCTN TCTTAGGTGA 600
15 ACGGGAACAC CAANGCGATC TTTCTCAATG AAAGACAAC TCGGACATNC CCNATTTAAC 660
CANTGGATGA TCCNANAACC TGAACAAGGT CTATTTCTGA AAACCTCNCC ATCTTCTTTT 720
TCTCATAACG AACCCNTTTN CCTCTT 746

(2) INFORMATION FOR SEQ ID NO: 4:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 795 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

(B) CLONE: U-U104

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

GGCACGAGGA AANGAGATAA TCGTTGACCG AGGCAGAGAA TGGCGAGCGA GAAGAGCAAA 60
40 ATCCTGATCA TCGGGGGCAC CGGGTACATC GGCAAGTTCA TCGTGTTCG GAGCGCCAGG 120
TTAGGTAACC CTACCTTCGC TCTCGTCCGG AGCACCACCG CCCCCGCCGG CCAACCCGAG 180
45 AAGGCCAAGC TCCTGAGCGA CTTCCAGGCC GCCGGCGTCA CCCTCGTCCA GGGGGATATA 240
TATAACCACG AGAGTCTGGT TAAGGCGATC AAGCTGGTGG ATGTGGTCAT CTCCCCGTC 300
50 GGCTTCGGGC AGCTGAGTGA TCAGACCAAG ATCATCGACG CCATCAAAGA AGCCGGAGGA 360
CACATCAAGA GGTACCTTCC ATCGGGAGTT TGGCAACGAC GTTANACCGA AGCCATGCTG 420
TGGAGCCAGC AAAGTCNACC TTTGTCTGTC AGCAACAAAT CANAAGGGCT GTTGANGCAT 480
55 CGGGTNTCCC TTACACCTTT GTATCTTCCA ACTTCTTCGG TGGGTATTTT CTCCCGGTAT 540
TANGACAGGC AGGACCACTG GTCCTCCCCA CNGACAAGGT TGTCTCTTA GGTGACNGGA 600
ACACAAAANC ATCTTTCTCN ATGAAGACAA CTCCGGACAT ACNCNATTAA AGCNGTGGAT 660
60 GATCCCAAAA CCTGAACAAG TTCCTATNTC TTGAAAACCT TCCCGCCCAA CCATCCTTTN 720
GTTCTCCNT TAAACCNAAC CTCCATTTTC CCCTCCTTGG GGAAAAAAA AAGGTCCGGC 780
65 NAANAACCTC CNAAC 795

(2) INFORMATION FOR SEQ ID NO: 5:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 797 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

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(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U13

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5:

15

CGGCACGAGG NAGAACCTTT TGACAGAGTT GTTGTATGCG CAACAAAAGC TTCTCTCTCC	60
ATAAAAGGCT TTGCCTTGCT GGTTTCAGTC CTTGTAGCAG TTCCAACAAG AGTGCAATCG	120
ATTGGTGTCT GCTACGGCAT GCTCGGCAAC AATCTTCCCC CGCCCAGCGA GGTGGTCAGT	180
CTCTACAAAT CCAACAACAT CGCGAGGATG AGACTCTACG ATCCAAACCA AGCCGCCCTG	240
CAAGCCCTCA GGAACCTCAA CATCCAAGTC CTGTTGGATG TCCCCCGATC CGACGTGCAG	300
TCACTGGCCT CCAATCCTTC GGCCGCCGGC GACTGGATCC GGAGGAACGT CGTCGCCTAC	360
TGGCCCAGCG TCTCCTTTTCG ATACATAGCT GTCGGAAACG AGCTGATCCC CGGATCGGAT	420
CTGGCGCAGT ACATCCTCCC CGCCATGCGC AACATCTACA ATGCTTTGTC CTCGGCTGGC	480
CTGCAAAACC AGATCAAGGT CTCGACCGCG GTCGACACGG GCGTCCTCGG CACGTCTAC	540
CCTCCCTCCG CCGGCGCCTT CTCCTCCGCC GCCCAGGCGT TACCTGANCC CCATCGTGCA	600
GTTCTTGCG ANTAACGGAA CGCCGCTCCT GGTCAATGTG TACCTTATTT TAACTACACC	660
GGCAACCCGG GANAGATCTC GCTGCCTACN CCCTGTTAC GGCCNCGGG TCTCNTGCAG	720
GATGGGCGAA TTCCNCTATC ANAANCTGTT CANTCCATCT TCNAAACCGG TCTTCCCGGG	780
CTGGAAAAAA TTGGAAG	797

(2) INFORMATION FOR SEQ ID NO: 6:

45

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 792 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

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(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U136

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6:

60

GGCACGAGGA GAACCCTTTT GACAGAGTTG TTGTATGCG AACAAAAGCT TCTCTCTCCA	60
TAAAAGGCTT TGCCTTGCTG GTTTTCAGTCC TTGTAGCAGT TCCAACAAGA GTGCAATCGA	120
TTGGTGTCTG CTACGGAATG CTCGGCAACA ATCTTCCCCC GCCCAGCGAG GTGGTCAGTC	180
TCTACAAATC CAACAACATC GCGAGGATGA GACTCTACGA TCCAAACCAG GCCGCCCTGC	240
AAGCCCTCAG GAACTCCAAC ATCCAAGTCC TGTTGGATGT CCCCCGATCC GACGTGCAGT	300

70

CACTGGCCTC CAATCCTTCG GCCGCCGGCG ACTGGATCCG GAGGGAACGT CGTCGCCTAC 360
 TGGCCCAGCG TCTCCTTTTCG ATACATAGCT GTCGGAACG ANCTGATCCC CGGATCGGAT 420
 5 CTGGCGCAGT ACATCCTCCC CGCCATGCGC AACATCTACA ATGCTTTGTC CTCGGCTGGC 480
 CTGCAAAACC AGATCAAGGT CTCCGACCGC GGTGACACG GCGTCCTCG GCACGTCCTA 540
 10 CCCTCCCTCC CGCCGNGGCC TTCTCCTCCG CCGCCCAAGC GTNCTGANCC CCATCGTGCA 600
 NTTCTTTGGC GAAATAACGG ANCGCCGCTC CCNGGTCCAT GTTTTTCCCT TATTTTAACT 660
 ACNCCGGCAA CCCNGGAAAG ATTTCTGCTG CCTTACGCC CCTGGTTTCC NNGGGGCTTC 720
 15 CCGGGCGTTT CTTCCTTTGC CAGGGANTNG GGGCGAATTC CCNNCTTTTC CANAAACCTT 780
 GTTCCAACNC CC 792

(2) INFORMATION FOR SEQ ID NO: 7:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 855 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
 (B) CLONE: U-U21

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7:

CGGCACGAGT CTCTCTCTGT CTCTCCGTCG TCTCGTTGTC TGTTCTGTTAG GGCTTGGCAT 60
 CGCCACCGGT CGCGAGGGTT GGAGCCATGG AATTCTTGCG GTTTGGGGCT GAGGTGGCGG 120
 40 CAGGAGAGGA AGCCGCGACG GGGTACTGGA TGCGATGGCA GACGCTCGTC TGCGCTCTGA 180
 TCGTCGTCGC CCCGGCGGTC GCCGCGGTGG TTGTGCGGGC GCGGGCGCCG GCGCCGGCGC 240
 45 GACCCTCAG GGCCGTCGAT CTCTGGGCGC CGTGCTGGGC CGGGATGCAC CCGGCCTGGC 300
 TTCTCGCGTA CCGCGGCTTC NTGTTCTTGG CCATGGCGTG GCTACTCTTC CANATGATTC 360
 50 TGTTTCGCGG ATTCTCCGCG TTCTACTTCT ATACTCAGTG GACGTTTGCC TTAGTCATTG 420
 TCTATTTTGC GATCGCAACC ATTATATCCG CCCATGGCTG CTGGCTTTAC TCAAAGAGAA 480
 GTATTATGCC AGATCAGGAG GTCAACAGAT TCCTAAATGG TGGTTTTGAG CANAATAGTC 540
 55 CTATGACTCT ACCTTTGAGG ACCAACAAAA ATATGAATGT TATAAGATTG CAAAGCTATC 600
 NTGAACAGGA NGCTGATGAA NAAAAANCTG GATTTTGGGG TCCTGCTATG CNACTNGTCT 660
 60 ATCAAAACCA TTGCANGTGC TGTAATTGTT GAAANACATT GTATTTTGGG NTCNTNCTAA 720
 TACCATATTT GTCTTCTATA AATTTTCAGGC TAAATGCTAT AATGGGCTGC ATGCATTCTC 780
 TTAATGCTGT GTTTCTTCTA ATCCAACACT TTTCTCAATA ACCTGCCATT CCCNTNTTTC 840
 65 NAATGGCATT TTTGC 855

(2) INFORMATION FOR SEQ ID NO: 8:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 722 base pairs
 (B) TYPE: nucleic acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U31

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8:

CGGCACGAGA GAGAGAGAGA GAGAGAGAGA GAGAGAGAGA GAGAGAGAGA	60
GAGAGAGAGC CTAGACCGGC ATCNTCGTGC TTGCCGAGGG GCGGCTTATG ANTCTTGTT	120
GTGCCACTGG GCATCCCAGC TTCGTCNTGT CCTGCTCCTT CACCANCCAN GTGATNGCAC	180
NACTGGANTT ATGGANGGAA ANGGCGACCG GCNNGTACGA NAAGAANGTC TATGTGCTGC	240
CCANGCNTCT GGATGAGAGG GTGGCNGCGC TCCNCCTCGG CAAGCTGGGT GCCNCGCTCA	300
CCNAGCTTAC NCCNTCGCGG GCTGATTACA TTAGCGTCCC GATCGAGGGA CCCTACANGC	360
CTGCTCACTA CNGGTATTNG GGTGCTTNT GCNAGAGACG ATGATNATAN NTCGGAGCAC	420
TGGCNTTTTC GACTANNAGT TTGACCGATG GCTATGTTTCG TTTTGCTTTT CACCTTTTGT	480
CTTCCCATCT TTGCTGGTTC ACCTATGGAC GTTTGTTCCTA TTTGGATGTN NTGAGAAATG	540
CTGATGGCAT TTTCGGAAAN AAAAANATNT AAAATCNCGA GAGTTCTTCT ANAGCGGCCG	600
CGGGCCCNTC NNTTTTCCCC CGGGTGGGGT ACCANGTTTG TTGTNCCCNT TCCCCCTNTT	660
TGAGTCCTTT TACTNCCCCT GGCCGTCGTT TTATACNTCG TTGACTGGGA ANACCCTGCC	720
NT	722

(2) INFORMATION FOR SEQ ID NO: 9:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 793 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U131

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9:

GGCACGAGCC TTGCCCACT CTTTCGATTC GTTCCAACGA TCGGAGAATG GCGCTGCTGG	60
TGGAGAANAC GTCGACGGGA CGCGAGTACA AGGTGAAGGA CCTTTCTCAG GCTGACTTCG	120
GCCGCCTCGA GATCGAGCTG GCGGAGGTGG AGATGCCGGG CCTCATGGCG TGCCGCGCCG	180
AGTTCCGGCC CGCCAAACCT TTCGCCGGCG CCCGCATCTC CGGCTCCCTC CACATGACCA	240
TCCAGACCGC CGTCCTCATC GAGACCCTCA CCGCCCTCGG TGCTGAAGTC CGGTGGTGCT	300
CCTGCAACAT CTTCTCCACC CAGGACCACG CCGCTGCCGC CATTGCCCCG GACTCCGCCG	360
CCGTCTTCGC CTGGAAGGGA GAGACCCTCG CCGAGTACTG GTGGTGCACC GAGCGATGCC	420

TCGACTGGGG CCCAACGGT GGCCCCGACC TCATCGTCGA CAAAGGGGGT GACGCCACTC 480
TCCTCATCCA CGAAGGCGTC AAGGCTGANG AAGANTACGA AAAAGACCGG CAAGCTGCCC 540
5 GATCCGGCCT CCACGGAAAA CGCCGAATTC CAAATCGTGC TGGGGATTAT CCGCNANCGG 600
CTCCAGGTCN AACCCCNAAA ATTACCGCCC AGATNAAAGA ACCCTCCTCC GCTTTTTGAA 660
10 GAAAACANCN CTGGCGTTCA NCGAATCTAC CANATGCCAG GGCCANCNGG GGCCCTTGTC 720
TTCTTTCCCC CNCCCANTC NAACNTTCN ACGAATTCCC GTTTTACCN AAAAACCAAN 780
TTTTGAACAA CCT 793

15 (2) INFORMATION FOR SEQ ID NO: 10:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 847 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-U32

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

CGGCACGAGG CGACGCCGGC CTTGCGCTCC GCGTCTCCCT CCACCTCCAC TGCCACCGCC 60
35 GCCCTCGCCT CCCCCTCCCC AAATCGGTCG ACTCCGCCGC CGCTACAGAC CCCGACATCC 120
TATTACTION CCGCGCCGGC CGCCGCCGTG CCGACTGCCT CTCCTTCGCT GTCGACGACC 180
40 TCCCTGTCTT CGACGGCAGG ACCCCGATGG AAGCCTACGA GGAGTTCTTC CGGAGCTTCC 240
GCCTCGCCTT CGCTGACTTC TTTGGTTCCG TCATTACGGA TATCACGATC GGTCTCGGGC 300
CAAATGGCGA GCTCCGTTAC CTTTCGTTTC CTCCCACTGG AAGCAATCGT TTCACCGGTG 360
45 TAGGAGAATT CAGTGTTAT GACAAATACA TGCTTGCCGA TCTCAAACGA CACGCGGAGG 420
AAACCGGCAG CCCATTATGG GGCCTCTCTG GTCCTCACGA TGCCCCTGGG TACAACCACT 480
50 CTCCGGACTT CGGCAACTTT TTCAAGGACC ATGGCGGCTC CTGGGANACA CCCTACGGGC 540
AATTCTTCCT CTCCTGGTAC ACCGGCAAGC TCCTGTCTCA CCGTGACGGC CTGCTCTCGG 600
TCGCGTCAGA AGTATTGGTG ATTTGCCTGT CGCGCTCTCG GGCAAGGTTT CACTTTCTGC 660
55 ATTTGTTGGC AACGAACTC GGTCGCGCCC GTCTTANCTT GAAGGCCGGG TTCTNTNACA 720
CTTGACGGNA NAANAACNGG TTTCAAGGAT GTTGGCTAAN ATCTCCCGAA ANCNTCTGTC 780
60 ANCATGATTC ATCCCGGGCN TGGACTTCTC NGAAGGGGAA CANTCCTCAG GGTGTTCCGG 840
TCTGCCC 847

(2) INFORMATION FOR SEQ ID NO: 11:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 822 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U55

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(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11:

10 GGCACGAGGC ATGGAGAACC CTGTTGCGAT GGGCATCATG GAGGAGCTTG AGGCCCAGAG 60
CGAGGTGTGG AACCACATTT TTAGATTCAT CACCTCCATG TCCGTCAAGT GCGCGGTGGA 120
15 GCTCAGGGTC CCCGACGCCA TCCACGCCCA CGGCGGCAAC GCAACTCTCC CTCAGCTGGC 180
CGCCGCCCTC AGCCTCCCTC CCGCCAAGCT CGCCGACCTC CGACGCCTCA TGCGCATGCT 240
GGTCCACGCC GGCTGCTTCG CCAAGCAGGA AGACNACGTG TACGCCCTCA CGCCATGGTC 300
20 GAGGCTCCTG NTGAGCTCCG AGCACACCGC GGTAGCCCCG TTCGTGGTGT GGATGCTCCA 360
CCCGCTCATG GTGCAGTCGT GGCACCTCGCT GGGGGCGTGG TTCCACGGGA GGGCGCCAC 420
CCCCTTCGCC GCAACCCACG GGAAAGGGGA TCTTCGAGAC NACACNCNAA CAGCCGGGGT 480
25 TCGCGGCCGT TCTTCANCNA NGCNATGGCG AACGACTGTC GGCTGGTGGG AAAGGTGTTG 540
GTAAANAACA TNCGGATGTG TTGGANGGAN CNCNGGTCCA TNGTGGAAGT TGGTGGCGCA 600
30 CCGGCACCCT TTTNGGCCAT TGTGGCCGA AGGCTTTCCC GCCAACATNA AATNGCACCG 660
TTCTCCNANT TTGCCCCACT TTTCTGGCCN CNGCCGCCGG GGCCCCNCN NACCNAACA 720
ACTTGATGT TTTTNGGGG AANACATNTT CCAACATTTT ACANCCGCNC GACNTTTTTT 780
35 ACNCAATTGG TTCCNGGCNC NAATGGAAAT ANTNCTGNAT TT 822

(2) INFORMATION FOR SEQ ID NO: 12:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 743 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U72

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12:

55 GGCACGAAGA GCCCTGTACC GGANAGCATG GAGAACCCTG TTGCGGTGGG CATCATGGAG 60
GAGCTTGAGG CCCAGAGCGA GGTGTGGAAC CACATTTTGA GATTCATCAC CTCCATGTCC 120
60 GTCAAGTGGC CGGTGGAGCT CAGGGTCCCC GACGCCATCC ACGCCCACGG CGGCAACGCA 180
ACTCTCCCTC AGCTGGCCGC CGCCGTCAGC CTCCCTCCCG CCAAGCTCGC CGACCTCCGA 240
CGCCTCATGC GCATGCTGGT CCACGCCGGC TGCTTCACCA AGCAGGAANA CNACGTGTNC 300
65 GCCCTCACGC CATGGTCGAN GCTCCTGGTG AGTCCGANC ACACCTCGGT GGCCCCGTTC 360
GTGGTGTGGA TGCTCCACCC GTCATGGTC CAGTCGTGGC ACTCNCTGGG GGC GTGGTTTC 420
70 CACGGGAAGG GCGCCACNC CCTTCNCCNC NACCCNCGGG AAGGGGATCT TCCANACGAC 480

ACNCGAACAT CCGGGGTTTCG CGGGCGTCTT CAACTANGCG ATGGCGAACG ACTGTCNGCT 540
GGTGGGAAAN GTNTTGTA AAAAAACCTTC CGGAAGTGTT NGANGGAACC CCGTCCAATN 600
5 GTGGAANTTG GTGGCNGCCG GCACCCTTNC GGCNATCGT TGTCGAAGNC CTTCCNCAC 660
NTTANATTNC ACCGTCCTCC AATTNTCCCC ANTTTCTTTN GCCGCNGGNN NCGGGCCCCN 720
GGTNANCCNA AANCNTTTNT TTT 743

(2) INFORMATION FOR SEQ ID NO: 13:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 806 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-U68

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 13:

TGTTCTCTCC TTCGATCACA TCTTTTTGCT CTGGGAAACG TGAGAGGTGA GACGAGGGCG 60
GCAATGACGG CGGGTTTAAG ATGGATTCTT CCTCTGCTTC TTCTTCTTCT GGGCTTCCTG 120
CTGGTTTTGA ACGGAGGTCG GGGGTGGATT GGAAGCGAGA GGTCCTCTGG CTCGAGGAAT 180
35 GGCGGAGCAT CGCGGAGGAG CTTGAGAGAG GCCTCCGCGA ACGCGACCAG CGCCGATGCT 240
TCCTTGGAAG AGAGGGCTGT AACCCGGGCA GCAGAAGCCG CAGTCGACGA CCCCAGGAG 300
GTTGCTTCGA CGGTCCTGAT GACCATAATC AACAGCACGG CTCGCAGATC TCTTGGTTAT 360
40 CTGTCGTGCG GTTCAGGCAA CCCGATCGAC GACTGCTGGC GGTGCGACCC TGATTGGCAT 420
GTCAACAGAA AAAAGCTCGC TGA CTGCGGC ATTGGCTTTG GACGCAACGC NATANGTGGC 480
45 CGCGACGGGG AATTGTTCG TTGTGACAGA CTCCGGGGAC NATGATCCCC GTGAATCCTC 540
GCCCCGGAAC ACTTANATAC CCCGTCNTCC AANGAAGTTG CCCCTCTGG GATCCCCTTT 600
AAACNCNAAN TGGAATCTC NCTCNANGGA AGAACTCNTT ATGAACAGCT TTAANACNAT 660
50 CGATGGACNC NGTGTCTCG TCCACATTGC CAATGGCGCC TGCNTACCA NCCAATTTN 720
TCCCCAACNT CTTCTTCNT NGCCTCCNT CCCCATGCA ACCCNCCGGG AATTCCTNGT 780
55 CCCCNTCCC CTTCTCCTAT GGATNG 806

(2) INFORMATION FOR SEQ ID NO: 14:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 687 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-U69

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 14:

5 GGCACGAGGG AGAACAAAAA TGGCAGCATT CTTGTTCTTC CTCACCATCG CAGCCTTCAC 60
TGCCCCATC TACTCTTCTC GTGCACCCTT AACGTCGGCA GCTGTCCGCG ACCCTGAATT 120
AGTAGTACAG GAAGTACAAA GAAGCTTGAA CGTGTGCGCG CGGCGACTGG GCTACTTGTC 180
10 ATGCGGCACC GGCAATCCGA TCGACGACTG CTGGCGGTGC GACCCTGACT GGGCTGACAA 240
CCGGCAGCGG CTCGCGGACT GCGCCATCGG GTTCGGAAG AACGCGATTG GGGCAGGGA 300
15 CGGCGAGATA TACGTGGTGA CCGACAGTGG CGACNACNAC CCCGTCAATC CGAAGCCGGG 360
CACGCTCCGG TACGCCGTCA TCCANGAGGG AGCCGCTGTG GATCATCTTC AAGCGCGACA 420
TGGTCAATCCA GCTGAAGGAA GGAGCTCATC ATGAAACTCC CACANAGACC ATCGACGGCC 480
20 GGGGCGCCAG CGTCCACATC TCCGGGGGGC CGTGCATCAC CACCAGTNCG TCNCCAACAT 540
CATCATCCAC GGGCGTCCAC TTCCACNAAT GCAANCAGGG CGGGGAACGC CTTACGTTCC 600
CGACTCCCCC AGGGCACTAC GGGTGGCGCA CCGGTGTCCG AACGGCNANG GGGTTTTTCAT 660
25 CTTCCGCGGG AACCACTTCT GGGGTCA 687

(2) INFORMATION FOR SEQ ID NO: 15:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 741 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U84

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 15:

45 TCCACATTGC CAATGGCGCC TGCATCACCA TNCAGTACAT CACCAACGTC ATCATCCATG 60
GCCTCCACAT CCAGACTGC AAGCCCACCG GGAATGCCAT GGTCCGCAGC TCTCCTTCTC 120
50 ACTATGGATG GAGAACCATG GCTGATGGGG ATGCCGTTTC CATTTTCGGC TCCAGCCACA 180
TTTGGGTGGA CCACTGCTCT CTGTCCAAT GCGCCGATGG ACTTGTCGAT GCCGTGATGG 240
55 GCTCCACTGC CATTACGGTC TCCAACAATT ACTTCACCCA CCACAATGAG GTCATGCTTT 300
TGGGACACAC TGATTCTTAT GCAAGGGACA GCATCATGCA AGTAACGATC GCATTTAACC 360
ATTTTGGTGA AGGTCTGATT CAGAGAATGC CCAGGTGCAG GCATGGCTAC TTCCACGTGG 420
60 TAAACAATGA CTACACGCAC TGGGAGATGT ACGCCATTGG CGGTAGCGCG AATCCAACGA 480
TCAACAGTCA AGGCAACCGA TACCTTGCGC CGACCAATCC ATTTGCAAAG GAAGTAACAA 540
55 AAAGGGTGGG CACAGATCAA AGCACGTGGA AAAACTGGAA TTGGANGTCN GAAGGTGACC 600
TGCTTCTGAA TGGTGCTTTT TTCACCCTTC CGGTGCANGG GCTTTCACCC ANCTACGCAC 660
GGGCCTCCAC TTTGGGGGCA ACCCTCTTCC TTNGTTGANA CACTGACTCT GATGCTGGGG 720
70 TCCTGTTTTG CCAATTCGGN C 741

(2) INFORMATION FOR SEQ ID NO: 16:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 727 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-U89

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 16:

GGCACGAGTT CTCTCCTTCG ATCACATCTT TTTGCTCTGG GAAACGTGAG AGGTGAGAAG 60
AGGGCGGCAA TGACGGCGGG TTTAAGATGG ATTCTCCTC TGCTTCTTCT TCTTCTGGGC 120
TTCCTGCTGG TTTGAACGG AAGTCGGGGG TGGATTGGAA GCGAGCGGTC CTCTGGCTCG 180
AGGAATGGCG GAGCATCGCG GAGGAGCTTG AGAGAGGCCT CCGCGAACGC GACCAGCGCC 240
GATGCTTCCT TGAAGAGAG GGCTGTAACC AGGGCAGCAG AAGCCGCANT CGACGACCCC 300
GAGGAGTTG CTTCGACGGT CCTGACGACC ATAATCAACA GCACGGCTCG CAGATCTCTT 360
GGTTATCTGT CGTGCGGTT AGGCAACCCG ATCGACGACT GCTGGCGGTG CGACCCCGAT 420
TGGCATGTCA ACAGAAAAA GCTCGCTGAC TGCGGCATTG GCTTTGGCCC GCAACGCGAT 480
ANGTGCCGC CACNGGGANT TGTNCNTTGT TGACAGACTC CGGGGACGAT GATCCCGTGA 540
ATCCTCCCCC GGAACACTTA ATATTCCCCG TCATCCCAGA NCTNCCCCTC TGGATCNCCT 600
TTTAAACACG ACATTGGAAA TCNCCCCCNG GAAGAACTCC TTTNTAACCG CTTTNNAAAC 660
TCNATGGACN CGTGTCACN TTCCACNTT GCCAATGGCG CCTGCCTCNC CANCCNATTT 720
AATCNCC 727

(2) INFORMATION FOR SEQ ID NO: 17:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 842 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-U115

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 17:

GGCAGAGGG AGAACAAAAA TGGCAGCATT CATGTTCTTC CTCACCATCG CAGCCTTCAC 60
TGCCCCGTC TACTCTTCTC GTGCACCTT AACGTCAGCA GCTGTCCGCG ACCCTGAATT 120
AGTAGTACAG GAAGTACAAA GAAGCTTGAA CGTGTCGCGG CGGCGACTGG GCTACTTGTC 180
ATGCGGCACC GGCAATCCGA TCGACGACTG CTGGCGGTGC GACCCTGACT GGGCTGACAA 240
CCGGCAGCGG CTCGCTGACT GCGCCATCGG GTTCGGGAAG AACGCGATTT GGGGCAGGGA 300

CGGCGAGATA TACGTGGTGA CCGACAGTGG CGACNACGAC CCCGTCAATC CGAAAACGGG 360
CACGCTCCGG TACGCCGTCA TCCAGGAGGA GCCGCTGTGG ATCATCTTCA AGCGCGACAT 420
GGTCATCCAG CTGAAGGAGG AGCTCATCAT GAACTCCAC AAGACCATCG ACGGCCGGGG 480
CGCCAGCGTC CACATCTCCG GCGGGCCGTG CATCACCACC AGTACGTCAC CAACATCATC 540
ATCCACGGCG TCCACATCCA CGAATGCAAG CAGGGCGGGA ACGCGTNCGT TCGCNACTCC 600
CCAAGGGCAC TACGGGTTGG CGCACNGTGT TCNGACGGCG ACGGGTGTCC ATCTTCCGCG 660
GGAACCACTC TGGGTCCAAC CACTGCANCG CTTGTTCCAA CTTGGCCAC CNAANTGGGC 720
CTTCNTCCC AACCCCATTT TCCTTGGGAT TNCCCCCGC CAATCCCCC ATTTTCCAAC 780
NAACTTNCTT TGAACCCNCC CNTGAANAAG GTCCTTGCTG CTGGGTCCCA CCAACAATTT 840
NA 842

(2) INFORMATION FOR SEQ ID NO: 18:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 724 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U117

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 18:

GGCACGAGTC TCCTTCGATC ACATCTTTTT GCTCTGGGAA ACGTGAGAGG TGAGACGAGG 60
GCGGCAATGA CGGCGGGTTT AAGATGGATT CCTCCTCTGC TTCTTCTTCT TATGGGCTTC 120
CTGCTGGTTT TGAACGGAGG TCGGGGGTGG ATTGGAAGCG AGAGGTCCCTC TGGCTCGAGG 180
AATGGCGGAG CATCGCGGAG GAGCTTGAGA NAGGCCTCCG CGAACGCGAC CAGCGCCGAT 240
GCTTCCTTGG AAGACAGGGC TGTAACCAGG GCAGCAGAAG CCGCAGTCGA TGACCCCGAG 300
GAGGTTGCTT CGACGGTCCT GACGACCATA ATCAACAGCA CGGCTCGAAN ATCTCTTGGT 360
TATGTGTCGT GCGGTTTCAGG CAACCCGATC GACNACTGCT GGCGGTGCGA CCCCATTGG 420
CATNTCAACA GAAAAAGCT CGCTGACTGT GGCATTGGCT TTGGCCGCAA CCCGATANGT 480
GGCCGCGACG GGGANTTGTN CGTTGTGACA GACTCCGGGG ACGATGATCC CCNTGAATCC 540
TCCCCGGGA AACTTANAT NCCGTCNTC CNNGAANTTT CCCCTCTGGA TCNCCTTTAA 600
ACCCACNTGG ANATCCCCCN CNAGGAAGAA CTCCTTATGA ACNGCTTTTT AAAACATCGA 660
TNGGACCCNG TTTCCAATTC CNCATTNGCC NAATTGGGCG CCCTGGCCNT CCNCCNTCC 720
CCAA 724

(2) INFORMATION FOR SEQ ID NO: 19:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 797 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single

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(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

(B) CLONE: U-U80

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 19:

GGCACGAGGG ACAAGCGATG GCAGCAGAAT TGTCTCCAC GCTGAGCAAG AGCATCTTTG 60
AAGGAGCCGG TGGATCTTAC TCTACTTGGT CAGGTGCCGA TCTCCCCCTT CTTACTGATG 120
CAAAGCTCGG CGGAGGCAAG CTTGTCCTGA AACCACTGGG CTTGGCGTTG CCTCACTATT 180
CCGACTCATC GAAAGTCGGC TATGTTCTTG AAGGAAGAGC GGTGGTGGGG CTAACACTCT 240
ATGGAGAGAC CGAGCAGAGG ATACTGCTGC TTGAGAAGGG AGATGTGGTA GCGGTGGTCA 300
TGGGGAGCCT CACGTGGTGG TACAACGAGG AGGAGGACTC GACTTCTCC ATCGCCTTCT 360
TAGGCGATAC CGCGACAGCT GTGCGACCGG GCGACATCGC CTACTTCTTC TTGGCAGGAT 420
CCCTAGGAAG TGCTCCATGG CTTTTTCGACG GAAATTCCTC ANCAGGGCCT GCGGTTTAAG 480
GGGATGCGGA AGCTGANGAG CTCTTCGGAA GCCAACCTGG TACTCTAATC ATCACACNGC 540
AGCAAAAGCT GCCTGGCCTC AGANCATCCC GAGCTGACAG CNAAGGGATA TCNTAAACGC 600
TGANC CGTA NCGGCATATA TCAATGTGAA AAGTGGTGGC TGTCTGCCT CGGTGACCCT 660
TNATNAACTG GCNGCCTGG GAAGATCAGG TTCTCCGTN ACCTCCAAA ATCCANCCTA 720
ACCCCGTGCC TTGCCGGGGT TCTTCNTTGA ATCNCTGTT CANCTGAAAT TTTCCCCAA 780
GGCCNTGGAA CAATTCT 797

(2) INFORMATION FOR SEQ ID NO: 20:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 742 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

(B) CLONE: U-U90

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 20:

GGCAGGAGAT GACTCTCTCG GCGGTAGCAT CGGATGCCGA TGATTCGGTC GCTTATACAT 60
TCGCTTCGCG ATACGTTGCG GAGGCTCTTC CCCGGTTCAG GATACCGGAG CAGTCGATCC 120
CCAAGGATGC GCGTACCAG ATCATCAACG ACGAGCTGAT GCTCGACGGG AACCCGCGGT 180
TGAATCTGGC GTCGTTCTGT ACGACGTGGA TGGAGCCGGA GTGCGATCGC CTCATCATGG 240
CGGCCGTCAA CAAGAACTAC GTCGACATGG ACGAGTACCC CGTCAACCACC GAGCTCCAGA 300
ATCGCTGCGT AAATATGATA GCCCACCTTT TCAATGCCCC AATTGGGGAA NACGAAACGG 360
CTGTTGGAGT TGGAACGTG GGTTCCTCCA GAAGCAATCA TGCTTGCAGG ACTTGCATTC 420

AAGAGGAAAT GGCAGAACAA AAGAAAGGCA GAGGANAAAC CTTACGACAA ACCCAACNTT 480
GTTACCGGTG CAAATGTTCA GGTTTGCTGG GANAAATTTG CAAGGTATTT TGAAGTTTGA 540
ACTGAAAGAA ATTGAAGTTG AAAGAAGGAT ATTATGTTAA TGGATCCTGC CAAGGCAGTA 600
NAAATGGTTG ATGAAAAATA CATATGTTTT TGCTGCCATC TTTGGGTTCA ACTCTCCCTG 660
GGAAAATTTG AANATGTTAA CCTTCTAAAT GATCTCCTGA CNGAAAAAAA CCCAGAAACT 720
GGGTTGGACC CCCNTACTT GT 742

(2) INFORMATION FOR SEQ ID NO: 21:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 807 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-U92

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 21:

GGCACGAGCT CTAGCCGATG ACTCTCTCGG CGGTAGCATC TGATGCCGAT GATTCGGTCG 60
CTTATACATT CGCTTCGCGA TACGTTTCGG AGGCTCTTCC CCGGTTTCAGG ATACCGGAGC 120
AGTCGATCCC CAAGGATGCG GCGTACCANA TCATCAACGA CGAGCTGATG CTCGACGGGA 180
ACCCGCGGTT GAATCTGGCG TCGTTCGTGA CGACGTGGAT GGAGCCGGAG TCGATCGCC 240
TCATCATGGC GGCCGTCAAC AAGAACTACG TCGACATGGA CGAGTACCCC GTCACCACCG 300
AGTCCAGAA TCGTGCCTGA AATATGATAG CCCACCTTTT CAATGCCCCG ATTGGGGAAN 360
ACNAAACGGC TGTGAGGTT GGAAGTGTGG GGTCCTCAAA AGCAATCATG CTTGCAGGGC 420
TTGCATTCAA GAGGAAATGG CANAACAAAA GAAAGGCAGA GGANAAGCCT TACGACAAAC 480
CCACATTGT TACCGGTGCA AATGTTNCGG TTTTGCTGGG AANAAATTTG CAAGGTATTT 540
TGAAATTTGA ACTGANAGAA NTGAANTTGA AAGAAGGATA TTATGTTTAT GGATCCCNGC 600
CCAAGGCAGT ANAAATGGTT GATGAAAAATA CCAATTTNTG TTGCTTGCCC ATCTTTGGGT 660
TCCACTCTCN CTGGGANAAT TTTGAAAAAT GTTNAGCTTC TAAATGATCT CCNGGACCNA 720
AAAAANNCCC NNAANCTNGG TTGGGACCCC CCCNTACCTT TTCNATNCCT GCCANTTNGG 780
GGATTCNNTA NCGCCTTTCC TNCTATC 807

(2) INFORMATION FOR SEQ ID NO: 22:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 770 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:

(B) CLONE: U-U91

5 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 22:

GGCACGAGAG AAAAAATTGT AAAGTTTGAC TTTCATGGAC AGCCTGCGGA GCTCAAGCAT 60
GGTAGCCTTG TCATAGCAGC AATTACAAGC TGCACAAACA CATCAAATCC CAATGTTATG 120
CTTGGTGCTG GTCTTGTTC AAAGAAGGCC TGTGAATTAG GTCTACAGGT TAAGCCTTGG 180
ATCAAAACCA GCCTTGCTCC AGGTTCTGGA GTTGTTACCA AGTATTGCT TAAGAGTGGC 240
15 CTACAAGAAT ATTTGAATCA GCAAGGATTT AATATTGTTG GGTATGGCTG CACAACATGT 300
ATCGGAAACT CTGGGGATCT TGATGAGTCT GTGGCTGCTG CAATTTCCGA TAATGATATA 360
GTTGCTGCTG CTGTTCTATC TGGAAATAGG AATTTTGAGG GACGTGTGCA TCCATTGACA 420
20 CGAGCTAACT ATCTTGCTTC ACCTCCGCTT GTTGTAGCTT ATGCGCTTGC TGGAACAGTT 480
GACATTGATT TTGAAAAAGA ACCCAATTGG AACAGGGGAA GGATGGGAAA AAACATATAC 540
25 TTCCAGGATA TATGGCCGTC CACTGAANAA ATTGCACAGG TTGTGCAATC CANTGTTTTT 600
GCCTGAAATG TTCAAGAATA CCTATGAAGC AATCACCAAA GCACCCTATG TTGGAACCAA 660
30 CTGACTGTTT CCNGCCACAC TCTTTATTCA TGGGACCCAA TCCNCNTACA TCTTAACCAC 720
CNTATTTTAA GGANATGACC ATGGCCCNCC TGTCNCATG GGGTGAAAAA 770

(2) INFORMATION FOR SEQ ID NO: 23:

- 35 (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 810 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
40 (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

(B) CLONE: U-U96

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 23:

50 GGCACGAGAG GGCCGTTCTT TTTTGTGCTC GCTTTGCTGC CTCCTCGTTC GTCTTTTCCG 60
CGAATTTTAC CGGCCATGAA CAGCCTTCGG AGCCTTCCGA CATCCTCCGC TCCGCCCTCG 120
55 CCGGTCCCGA GAGGACGTTT GAGTAGGCCA CCGACCTTGA ATCTGGGGGT GATACGACCA 180
CATCATCTTC GTGTAAATGT CGCCAGGAGT GCATGTTCCA AGTCTTCTGC AAGTCCTGAG 240
AAGACTGGTG CTGAAGTGCA AGATCAGAAG TCTGAGATAT ATAGCAGTGA TATGACAAAA 300
60 GCAATGGGTG CAGTGCTGAC ATATAGGCAT GAGCTTGGA TGAATTATAA TTTCATCTAC 360
CCAGGATTGA TTGTTGGTTC TTGTCTACAG ACCCCATCAG ATGTTGATAA GCTTCCNAAA 420
65 GATTGGGGTT GAAGACCATC TTTTGCTTGC AGAAGGACTC GGATCTTTGA ATATTTTGGG 480
GTTGAAATTG GTGCAATTCC NTGAATATGC CATGCAATGT GGTGACATTG AACATCTTCN 540
TGCTGAAATC AGGGATTTTG ATGCATTTGA TTTGAAGATG ANACTTCCTG CNGTANTTAC 600
70 NAATTATACA AGGCTAATTA ATCCGAATGG TGGAATGACT TATTTTCNCT GTACANCCNG 660

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GCTTGGAAAA CGCCTGCANT TGCNTTGGCA TACNTGTTTT TGGGTTNAAG GCTATGAACT 720
GAATGAAAGG GCCCCNCTAC TGCNAAATTA NCCAACCTGC TCCCCNAAAT TTGGTGCTAT 780
AAAAANTGCC ACCNTTGATA TGCTTATNGG 810

(2) INFORMATION FOR SEQ ID NO: 24:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 765 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U103

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 24:

GGCACGAGCT TGGCTGTAGT CTTCTTCTCA AGTAATCTTC GTCTTCCTGA TTTGCTTGCT 60
TGGTGGTCGG TTGCAGGGCG AAGGGATGGG GATGGGGAGG CCGAGCGGAG CTTGGTCGAC 120
CCCGTGGTTG GTGGTGGTTC TTGTGCATTG GCTCCTCTGG GCCACCGAGA GGAGGCGAGG 180
GGCGGTGGTG GAGGCCTCCC ATGTGGAGTT TGCATCCCTC CAATCTGTTC CTGCCTCCGT 240
CGTCGACAAC AGGCTGAGGA CTGGGTATCA CTTCCAGCCC CCGAGGAACT GGATCAACGA 300
TCCAAATGGA CCCATGTACT TCAATGGCGT CTACCACCTC TTCTACCAGT ACAACCCCAA 360
TGGCTCCGTG TGGGGTAACA TCGTGTGGGC CCACTCGGTG TCGACCGACC TCGTCAACTG 420
GATAGCACTC GACCCGGCCA TCCGCCCCAG CAAGCCATTC CACATCAACG GATGCTGGTC 480
CGGCTCCGCC ACCGTCTCC CCGGCAACAG GCCTGCGATC TTCTACACCG GCATCNACCC 540
CCANCANAAA CAACTGCANA ACNTTNCNTN CCAAGGATC TGTCCAACCT TACTCCCCNA 600
NTGGGTCAAC CCCACTNCAA CCCCGTGATC CCCCTGGCGA CGCATCAACN CCACCCCTTC 660
CNCNAACCCN AATACGGNTT GGCGCNGTCC CNGCACCCNC TGGAACCCC TNGTNGGGAA 720
CNANTTGAAN CNGAAGGGGA AAGGCNTTCT TTNCCGAACA GGGAT 765

(2) INFORMATION FOR SEQ ID NO: 25:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 774 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U93

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 25:

GGCACGAGCG GAGAANGCAA TCTCGCTCTC TCTCTACTGC ATCGCGGCTC TCGTCTCTCGA 60

TTACTTGAGA TATGGCAGGA AAGGGCGAGG GGCCGGCGAT CGGGATCGAT CTCGGCACCA 120
 CGTACTCGTG CGTCGGGGTG TGGCAGCAGC ACCGGGTGGA GATCATCGCC AACGATCAGG 180
 5 GGAATCGTAC CACCCCCTCC TATGTCGCCT TCACCGACTC CGAGCGCCTT ATCGGCGACG 240
 CTGCCAAGAA CCAGGTCGCC ATGAACCCCA TCAACACCGT CTTTGATGCA AAGCGTTTAA 300
 10 TTGGTAGGCG ATTCAGTGAT TCATCTGTCC AGAGTGACAT CAAGCTCTGG CCTTTCAAGG 360
 TCATTCCTGG TCCAGGTGAC AAGCCCATGA TTGTTGTCCA ATACAAAGGG GAGGATAAAC 420
 AGTTTGCAGC TGAAGATATT TCTTCCATGG TTTTGATAAA GATGAAAGAA ATTGCTGAAC 480
 15 CTACCTGGGG TCTGTTGTCA AGAATGCCGT CCTCACTGTT CCCGCTTACT TCAATGACTC 540
 NCAACGCCCA GCCACAAAGG ATGCTGGTGT CATTGCTGGT CTCNATGTTA ATGANAATCA 600
 TCAATGANCC CCCAGCACTG CTATTGCTTT ATGGCCTTGA CAAAANGCTA CTATTGTTGG 660
 20 TGAAAAAAT TTCCTCATCT TCCATCTCCG GTGGGTGGCC TTTTGANTTC NCCTTCCTNA 720
 CCATCCAAGA AGGTTTCTTT NAAGTCAAGG CCCTGCTGGT GANACCCANC TTGG 774

(2) INFORMATION FOR SEQ ID NO: 26:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 786 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
 (B) CLONE: U-U125

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 26:

GGCAGGAGCT AGTCTCGAGT TTTTTTTTTT TTTTTTTTAA AATTGAAATT AGATGCGATT 60
 45 TEGAATAGCA AACATAGTTC AGGATAAACC AACAACATTG TACCGAATTC GATAAGCTTA 120
 GGAAACTAAA TTGCGTAAAC GAAACACTTG CATGAAAGCC TATATAATAT AAGGCCGACT 180
 50 AGGGACNAAA TAACTTAATC GACCTCCTCG ATCTTTGGAC CAGCGCCGCT GCCACCAGCA 240
 GGAGGAGCAT CATCATCCAT ACCACCAGCC ATGTCAGCAC CTGCTCCCTG GTACATCTTG 300
 GCGATGATGG GATTGCATAT GCTCTCCAGC TCCTTCATCT TGTCATCGAA CTCGTCGGCT 360
 55 TCTGCCAACT GGTGCCATC GAGCCATTGG ATGGCCTGCT CGATCGCATC CTCCGATCTT 420
 CTTCTTGTC A GCAGCAGCAA GCTTGGAGGC AATCTTGTCG TCGTTAATGG TGTTCCTCAT 480
 GTTGTNAGCA TANTTTTCCA GANCATTCTT CCGATTCCAC CTTCTTTTTT ATGCTCCTCC 540
 60 ATCTTCCTGA CTTGTTACTT CTCCGCTTCC CTGCACCATT TTCTCAATCT CCTCCTTGCT 600
 GACCTACCTT GTCCTTGGTG AAGGTGATCT TGTCTCTGT CAGTGGTCT NTCNTCNGCA 660
 65 GAAANATTCC AGAATACCAT TGGGGTTCCA AATGTTNCAA AACCAAACCC GGTGGATTCT 720
 TGAAGGAAAC CCCCCCTAA GGGCCCCAGG GTGGGAAATC CCCCCAAAAA ACCCCCCAAAT 780
 TTTCCC 786

(2) INFORMATION FOR SEQ ID NO: 27:

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- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 486 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-U105

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 27:

GGCACGAGCG AGTTTTTTTT TTTTTTTTTT TTTTTTTTTT TTTTCAACAAG GNAACCATAG	60
ACATTACACC AAACATAGAT GTCAACAATA CATGCCAACG ATACCATTGC TTATTCCTTC	120
AGACCTCCGA TAGGACTTCC ACGCACACCA ACAGAGAGAA CTAAGACAGC AAAGCAGCGG	180
ACACATACAG CCCAAAAGGG TNNGTGACCC CCGCGGAGGN GGAGCNCCAG GTGAAGGGTG	240
GATTCCTCT GAATGTTGTA TTCTGNCAGG GTGCGCCCGT CCTCNNTTTG NTTCCNTCT	300
NANATCNCCC NCTGNTGATC TGGTGGNAAT CCCCCCTTG TCCTGTGATT CTTGCTCTTG	360
ACNTTTTCT CCCNTGTCNN ANCTCTCTNC CTNCTCTGGG TTTTGGGTCT TCCCCTGTTG	420
NANCNNTCTN TTNNCNTATC ATCTTGNTCT CCNNCCNCCN CNCCTNTCNT TTCCTCNNNN	480
GGTNNA	486

(2) INFORMATION FOR SEQ ID NO: 28:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 791 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-U116

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 28:

GGCACGAGTG ACAATGTCAA GGCCAAGATT CAGGATAAGG AGGGCATTCC CCCCACCAG	60
CAGAGGCTCA TCTTTGCCGG CAAGCAGCTC GAGGATGGCC GCACCTTGGC TGATTACAAC	120
ATCCAGAAGG AGTCCACCCT CCACCTTGTC CTCCGCCTCC GTGGTGGCAT GCAAATCTTC	180
GTCAAGACTT TGACTGGGAA GACCATCACC CTTGAGGTGG ANAGCTCGGA CACCATCGAC	240
AATGTAAAGG CCAAGATTCA GGACAAGGAG GGTNTTCCCC CGGACCAGCA AAGGCTCATC	300
TTTGCCGGCA AGCAGCTTGA GGATGGCCGC ACCCTGGCAG ATTACAACAT TCAGAAGGAG	360
TCTACCCTTC ACCTTGTGCT GANACTTAGG GGTGGCATGC ANATCTTTGT TAAGACNCTC	420
NCAGGGGAAG ACCATTACCT TGGAGGTGGA NANCTCNGAC ACGATTGATA ATGTCNAGGC	480
AAAGATCCAN GACAAGGANG GGATTCCACC GGATCAGCAN ANGCTGATCT TTGCTGGGAA	540

ACACTGGANG AAGGGCGCAC CCTGGCAGAT TNCNACATTC CNAAGAATC CACCTTCACC 600
TGGTGCTCCC CCTCCGCCGG GGTCCCTAAC CCTTTTGGGC TGTATGTNTC CCCTGCCTTT 660
5 GCTGTCTTAA TTCNCTCTGT TGGTGTTTCGT TGGAAATTCC CTAATCCNGA AGGTTCTTNA 720
AAAGGAAATN AANCCNNTTG GGTTCCTCCC TTTGGCCTTT TTTTGTGTTG AAAATCCTNT 780
GTTTTTGGTG T 791

(2) INFORMATION FOR SEQ ID NO: 29:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 814 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-U120

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 29:

GGCAGNANCC CGCTTCGGTA GCCATTATTG GTGCCCAGTAG AGCGAGTGCT GAGATGGCTT 60
TGAGGGCCTT CTTCCCCCTC TGCATCGCTC TCGTGGTGAC GCTCTCACCT CTGTGTGATG 120
CCACTTCGCC TTAATACACC ATCACACCGC CCACCCCCGT GGCCAAGCCG CCTTCAGTTG 180
35 AACCAACCACC CTACCACGGC CCTCCGACNA CCCACCCTAA GCCACCGAGT CATGGTGGCC 240
AACCTCCGTC CCACCATCAC CCAACACCAA TCTACGGTGC ACCCCCTCCG CAACACCACC 300
ACCACCACCA ACACCACCAC CAACCTGCAC CACCAACTCA CGCANAAACAC CCTCCGTAAT 360
ACCACATGCC TTCCCCGCCG CCGCATGGCC AGCACCCGTC ACCACCGTCA CATGATTATC 420
CCGTACCTCC TGCTACAAG CCCCAGAACTC CGCCGCCGGT TTACAAGTCT CCACCACCGA 480
45 NCCACCGTCC TTACCCTCCA TCGACGCCAC CCCACCATCC GAAGCACCCG GCTTCTCAGC 540
CGAAGCCGTC NTACAAGGCC CGCCACCATN CAAGAATCCT CCTGANCACT CTCCACCGCC 600
GCGTCACTAT CATTCTCCGT CTTCAACCACC ACCACCACCA CCATACAAAA TAATCTCGTT 660
50 TTGCCATCTT CTCCCGTTTG AAAAAAANN CAANTGTCCT TTTTATTTAA CCNAATCCAN 720
GGGGTTTTTN TTAANATTTN AANAAANCNA ANTNTTTTCC CCCCCNTNTT GGTTNATGGC 780
55 CTATGGGTTT GTTCTCTTC TTGGCTTTTC CCGG 814

(2) INFORMATION FOR SEQ ID NO: 30:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 742 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-U126

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 30:

5 GGCACGAGGT TGTGCCTAAC AGAGAGAGAG AGAGACAGAC CGATAGCCTC CTCATTCACT 60
ATGGCGATCC GATCGCCAGC TTCGCTGCTG TTATTTGCGT TTCTGATGCT TGCGCTCACA 120
GGAAGACTGC AGGCCGGGCG CAGCTCATGC ATTGGCGTCT ACTGGGGACA AAACACAGAC 180
10 GAGGGAAGCT TAGCAGATGC TTGTGCCACA GGCAACTACG AATACGTGAA CATCGCCACC 240
CTTTTCAAGT TTGGCATGGG CCAAACCTCA NANATCAACC TCGCCGGCCA CTGTGACCCT 300
CGGAACAACG GCTGCGCGCG CTTAAGCAGC GAAATCCAGT CCTGCCAGGA GCGTGAGATC 360
15 AAGGTGATGC TCTCCATCGG AGGTGGCGGG TCTTATGGCC TGAGTTCCAC CGAANACGCC 420
AAGGACGTGG CGTCATACCT CTGGCACAGT TTCTTGGGTG GTTCTGCTGC TCGCTACTCT 480
20 CNACCCCTCG GGGATGCGGT TCTGGATGGC ATANACTTCA ACATCCCCGG AGGGAGCACA 540
GAACACTATG ATGAACCTGC CGCTTTCCTC CNAGGGCTAC AACGAACAGG AAGCCGGAAC 600
CAAAAAAGTT TCACTTGAAT TGCTGCTCCC NCANTGTCCT TTCCCCGATT ACTGGCTTTG 660
25 GCAACCCACT CCAAAACAAA TNTCTTCNA CTTCNTGTT GGGTTGCNAA NTTCCNTTCC 720
CAANCAAACC CCTTTCNTTT GC 742

(2) INFORMATION FOR SEQ ID NO: 31:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 794 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U129

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 31:

GGCACGAGGG CGTGGCGGAG ATGGGGAGCT GGCGGGCTCT GTTGCAGCGG CGGCTGCTGT 60
50 TGCTCTCTGC TTTGGCGGTG GCTGTTCGTG TGAAGGCACT CAGCANANAC NATTTCCCCG 120
CCGGCTTCAT TTTTGGCGCA GGCACCTCCG CTTATCAGGT ANAAGGTGCA GCTGCAGAGG 180
55 GGGGAANAAC ACCCAGCATT TGGGACACGT TTACGCATGC AGGGAGAACT TCGACCAGA 240
GCACCGGAGA CGTAGCAGCT GATCAGTATC ACAAGTACAA GGAAGATGTG AANCTGATGC 300
ATGANATGGG CTTGATGCT TACAGATTCT CCATCTCCTG GTCCANAGTT ATCCCCAATG 360
60 GTCGAGGGCC TGTGAATCCA CAAGGCTTGC GGTACTACAA CAACCTGATC GATGAGCTCN 420
AAAGATATGG AATCCGAGCC TCATGTCACT CTTTACCACT TCGACCTTCC GCAAGCACTG 480
65 GAANACGAAT NCGCCGGGCA GCTGAACCCA AAGATCGTAN ANGACTTCAC CGCTTACGCC 540
AACGTTTTGC TTCANCNAAT TTGGGGATCN AATCTAGCAC TGGATCNCCC ATCAATGAAC 600
CAACATANAT CCGTCTCTCC GCCACNAATT CCGCATCTTC NCCCCTGGCC CCTGCTCTTT 660
70 ATCCCTTNCG CCTCCAACTG CNCCAAGGGC NACTCCCCCC CATTTTNAAN CCCATNNNNT 720

CCNCCCCCCC CAATTAACCC NTTCTTGCTC TTCCCCCTTG CCTTCANCCA ACCCGCCCNT 780

TTTCCNAAAA AANA 794

5 (2) INFORMATION FOR SEQ ID NO: 32:

(i) SEQUENCE CHARACTERISTICS:

- 10 (A) LENGTH: 799 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

15 (vii) IMMEDIATE SOURCE:

(B) CLONE: U-U130

20 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 32:

GGCAGAGCC GGCCTCAGGC ATATGGTGGC GTCGCTACAC GTGTTCAAGC AAGGCCGGGA 60

25 GCCGGCCAGG ATCATCAGGG AAGCACTGTC GAAGGCGCTG GTGAAGTACT ACCCCTTCGC 120

GGGGCGGTTT GTGGACNATC CCGAGGGCGG CGGCGAGGTT CGTGTGCTT GCACTGGCGA 180

30 GGGCGCTTGG TTCGTCNAGG CCAAGGCGGA CTGCAGCTTG GAGGACGTGA AGTACCTCGA 240

TCTCCCGCTC ATGATCCCTG AGGACGCGCT CCTGCCCAAG CCCTGCCCGG GACTGAACCC 300

CCTCGACCTC CCTCTCATGC TGCAGGTGAC ANANTTCGTG GCGGGCGGAT TCGTGGTCGG 360

35 CCTCATCTCC GTCCATACCA TCGCCGACGG CCTCGGCGTC NTCCANTTCA TCAACGCCGT 420

CGCCCGAAAT CGCCCGTGGC CTGCCNAANC CCACCGTGGA NCCTGCATGG TCCCGGGANG 480

40 TCNTACCCAA CCCACCTAAG CTGCCTCCCG GTGGCCCGCC CGTGTTTCCC CTCCTTCAAN 540

CTGCTCCACG CCACCGTCGA ACTATCCCCT GACCACATCC ATCACGTCAA GTCCCCACAC 600

TTTGGANCTC ACCCGGCCAA CGCTGCTCTA CCTTCCACNT CCCCATCCCC AACCTGTTTG 660

45 NAATCCCGCA CGCCCCGCCN TCNACCTTGG AACCCTAAGG NTTTCCAANG TTTGCAACGC 720

TTTTTTCCTT TCCTTCCCCC CCCAAAANAA CTTCCCCCA CCCTTGTTTT TGCNCCCAAG 780

TTTTTTCCTT CCTTGCCCC 799

50 (2) INFORMATION FOR SEQ ID NO: 33:

(i) SEQUENCE CHARACTERISTICS:

- 55 (A) LENGTH: 759 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

60 (ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

(B) CLONE: U-U43

65 (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 33:

GGAGTTGTT GTTCATGTCC CTAATTCGGG GTCTCTGTA CAGATTGAAT TTCAAGTAAC 60

70 TAATAGCAGT GGCTACTTGG TGCTTCATTG GGGTGCAATT CATAATAGAA GGAATAACTG 120

5 GTCACCTCCT TCTCGTCATC CTGATGGAAC AAAAGTATAC AAAAACCGAG CTCTCAGGAC 180
ACCTTTTAAA AAATCTGGTT CCACATCATC AGTAAAAATG GAGATTGATG ATCCTGAAAT 240
ACAAGCAGTT GAGTTTCTCA TATTTGACGA GTCAGAAAAC AAATGGTTTA AACATAATGG 300
TCAGAATTTT CATGTCCAGT TATTAACAACA GGGCTATCAA AATCAAAATG TTTTGGCCTC 360
10 TGTAATCCCA AATGTTTCAC TGCCANAAAG AACTTGTGCA GATTCAAGCT TATCTTAGGT 420
GGGANANAAA GGGTAGGCAA ACATATACAC CTGATCAAGA AAAGGATGAG TNTGAAGCAG 480
CTANAACTGA GTTTGCTANA AAAACTAAGT NNAAGTACTT CTGTANANGA NCTCCGATCT 540
15 AAATTGACAA AAAACNCCAC TGCTGGAGCG GACAAATCCG TCAAAGTTGA AACTATCAAA 600
AGTGGGATCC GGATGATCTT NTGCAAGTTA CANGCATACT TCCNATNGGA AAAACCGGGA 660
20 AACCATNTTA TCCCCNGAA AAACACTNAT GGAATTGAAG AAACCAGGGA AANACTGCCC 720
ATGAATTTAA TAAANGAACN CNCCTNCAAA CTNAGGGAA 759

(2) INFORMATION FOR SEQ ID NO: 34:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 785 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-U70

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 34:

GGCACGAGAG AGAGAGAGAG AGAGAGAGAG AGAGAGAGAG AGAGAGAGAG AGAGAGAGAG 60
AGAGTAATCG ATTTAGCGTG CAAAGTACTG CAGCAGAAGC CATGGCATCC ANGGCCTCAG 120
45 CNTCGGCTGC CCTCTTCCTT GCTCTCAACC TTGTCTCTT TGAACCTACC AGTGCTTGTG 180
GCACCACTTG CACCCCCGCC ACTAAGCCCC CACCGAGCTC TTCCCATGGC AAATGCCCCG 240
50 TCGACACCCT CAAGCTGGCC TCCTGCGCCA ACGTGCTCAA TGGCCTGATC NNGGTCGGCG 300
TCGGCAAGCT CCCGAAACAG CCGTGCGAGT GCTGCNCTCT GCTCGATGGC CTCGTCGACC 360
TCGAGGCCGC CGTGTGCCTT TGCNCTGCTA TCANGGCCNA TGTCTTGGC ATTCATCTCA 420
55 ACCTCCCCAT CNCTTCAGC CNTCTCCTCA ACTACTGCGG TNAGAAGGCT CCCACCGGTT 480
TCCAGTGCCC TTGAGCTCCC CCTGCGGATC ACATCNTCGA TCCTCTTTCG CCGTGGTGAA 540
60 TTTTNTTGAG CATTCTTTG TGTCTTTACT TCCCTTTGTT TTTGGCTTTT TGATGACGAA 600
AGTGTTGAGT GTTGATATGA AGGGCCANTG GCGCTTTCNT GTTAATGTGA CCTGTCNTTC 660
CCTTTTTATT TCCACNNCTT GTTGANTTTC CCTCTCGGGT TTGTTAATGA AGATCNATGC 720
65 ATTCAATTNT TAATATTTCT GCTGCCTTCC AANAAAAAAT ANNANTNCCT CCNNGAANTC 780
TTCCT 785

(2) INFORMATION FOR SEQ ID NO: 35:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 784 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-U16

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 35:

CGGCACGAGG AAANGACNAG CGATGGCAGC AGAATTGTCT CCCACGCTGA GCAAGAGCAT 60
CTTTGAAGGA GCCGGTGGAT CTTACTCTAC TTGGTCAGGT GCCGATCTCC CCCTTCTTAC 120
TGATGCAAAG CTCGGCGGAG GCAAGCTTGT CCTGAAACCA CTGGGCTTGG CGTTGCCTCA 180
CTATTCCGAC TCATCGAAAG TCGGCTATGT TCTTGAAGGA AGAGCGGTGG TGGGGCTAAC 240
ACTCTATGGA GAGACCGAGC AGAGGATACT GCTGCTTGG AGGGGAGATG TGGTAGCGGT 300
GGTCATGGGG AGCCTCACGT GGTGGTACAA CGAGGAGGAG GACTCCGACT TCTCCATCGC 360
CTTCTTAGGC GATACCGCGA CAGCTGTGCG ACCGGGCGAC ATCGCCTACT TCTTCTTGGC 420
AGGATCCCTA GGAGTGCTCC ATGGCTTTTC GACGGAATTC CTCANCAGGG CCTGCGGTAT 480
AAGGGATGCG GAANCTGAAG AGCTCTTCGG AAGCCAACCT GGTACTCTAA TCATCNCCT 540
GCANCAAAAG CTGCCTGGCC TCANAAGCAT CCCGAGCTTG ACNGCGAAGG GATAGTCNTN 600
AACNCTNANC GCGTTNCGGC ATATATCAAT GTNAANAGTG GTGGCTGTGC TGGTCCCGTG 660
ACACTTNATG AACTGGCCGC GCTGGGAAGA TCTGTTCTCC GTCNAACTCA CCANANTCNA 720
ACCTAACCCC NTNCNCTTCC NGGGTTCTCC TTNATGCACT NTGCNCCTAT TTNTTTCCCA 780
ANGC 784

(2) INFORMATION FOR SEQ ID NO: 36:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 817 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-U30

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 36:

CGGCACGAGA TATGGAGGTA TGATCGGGAG CTA CTGGGAG CTCCGCTTTG GTGAACAACA 60
CGACGGCAAG AAGGGCTATG GATTCAAGGA GTGAAGGCCA TGGTACCGCA NAGGCGGGTC 120
TTCCGGGCGT GCACCGAATT TTGCATCGGA TGA AACCTT GGTCATCAGC ATATGGGGGC 180
TGGGTTCCAC CAAGGGAAAA GTTCGAATGC AAGTACCAGT GAGTCCCATG AGAGGGACTT 240
GATCATGCAG AGGTATGATC GAAGCAGCTG GAGANTTGA CTGCTCCANA GCTCATATTC 300

GCTTAAGGGA GCCCGACAAG TCAGAGGACA AGGTCGAGTA AGCGAACGTT GCTACCCAAA 360
ATCAAGCATC AGTTANAATG GAGGTGGACT CANAGGAGTG CCACGGAAGA CATCTCTACT 420
5 GATTGTGAAG GAAAGGGATA CAGAGGCGAA NCGACGGATA NTANGGCCAT GGGCATGGCA 480
GCGCCATGGT ACCGCANANG CGGGACTTCC GTGCAAGTCA TTGATCCCTT GCTCTCACGG 540
10 AGGGANANCG CTTGGTCCTG AAAGGGGCCN AAGAAGTGA CATGCANANG CAATCTCCAA 600
TTACCGAAAC ANGGCTGAAG GGCANAAGCC NANAACTTC CTNAGAACGG TGTCACAAT 660
TTCTCATCNA NATANCCGTA ATTAANGACT TCCGGTCATG CNANAATNCC CNACCNANGA 720
15 ACCAANCAGG CNTACTTGTG CTGTNCTTTG CTACCCNNTG AATNGCGCCN GGTTNATNGA 780
AAAAACGTCC TTCCCCAAGC AACCTCTNT CAAAAAN 817

(2) INFORMATION FOR SEQ ID NO: 37:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 837 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-U40

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 37:

TTTTTTTTTT TTTTTTTTGG GTATCAGGCA AAGATGGATA CTTCAGGTT TGCTATTTAA 60
40 GAACCATAGT CAGTCTTATG AGGAGAGACC ATACGTAATA CAATCTTTAA GATGACAAAA 120
TCCATTCCTA CCAATACAAT GACCAAGCGA AAGGTACAAG GATAACGGGC AAAAGACTAA 180
45 ATTGCAACTA TATAAAATTC TGCTGCATTG TAGTAAATTC AACTGTGACG ACACGCCACC 240
AGGATGAAGT CTATCTATAA ACCCACTTAT TGCTAGATGG ACGGTGTAAC AGAGCTAAAA 300
CAGCAAAGTA GAATAAAAGA AACTGACAAC GCTTCCGCAT GCGCTCCACA TATGGAGCCA 360
50 GCGGGAGGTT GGGCAATTGG AGGAAATGAC NTTTCTGACG GTGTAACATA AAANAAATTT 420
GTAACACCGT CAAGTACGAT TTCCCATCCT TCGGGTTGTG GCGTTCTGCT ACTTGGCATT 480
55 ACGTTAACAT CGAGTGCCGA CTTGGCAAGA CAGGACCCCA GCATCAGAAG TCAGTGTGTC 540
AACCAAGGAA GAAGGCTTGG CCCCAAAGCT GGAGGCCCGT GCGTAACTGG CTGAACCCCT 600
GCACCGGAAN GGGTGAAAAA AGCACCATTG AGAACAGGTC NCCTCCGACC TCCCAATTCC 660
60 AGTTCTTCCA CCNTGCTTTT GATCTGTGTC CACCTTTTTG TTACCTATTC CATCGAAGCN 720
TANGGATTTT TAAAAATCCC GAAGGAAAGG AANTTCCNAT AATTGGTGCN CCAAANAAGG 780
65 AAGATGGACN GAACTGTTGT TGGTTGCTCC TGTTCTCTCT TTGCAATGGA TTGGTCG 837

(2) INFORMATION FOR SEQ ID NO: 38:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 799 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single

(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

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(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U108

10

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 38:

GGCACGAGGC AGCTCAATCG ACCGACTCCT CCTCCTCCTC CTCCTCCTCC TCTTGTTCTT	60
CTCATTCTAA TATAATTATC GCTTTTGGTG TGTACATCTT CTATAATTG AGAGGATGGA	120
GGCAGGATTG ATGGCGAAAC AAGCAGCAGC GGTGCGAAG CCGAACGCGT TCCCCGCCCC	180
GAGCCTAGGG TTCGGGAGCT CGGTCAGGGG CGGATCCGGG ACCAGCAGGA TCGGGTTCGA	240
GGCGCCCGCG AGCGTGGCAT GGAGGAAGCG GTCGATTGAG GTGGCCCGCC AAGGAGCCAT	300
TCGGTCGGAG GTGGTCGTGG AANANAAAGC ATCNCCGCCC AAAAAGGATA AGGCCGGTCC	360
GGGTCGGCTC TACGTGGGTC TGCCCTTGGA CGTGGTCTCC GACGGCAACG TCNTCAACCA	420
CGGCAAGGCC ATCGCCGCCG GTCTCCGCGC CCTCCGCCCT CCTCGGCGTT GATGGANTCN	480
AACTCCCCCA TCTCCTGGGG CGTTGGCGAT GGAATCCGGC GAATGGTCCT CCTACCTCCC	540
CCGTCNCCGC CATGGCGCGC GACNCCCGGC CTTCGCCTCC GCGTCTCCCT CCACCTCCAC	600
TGCCANCGCC GCCCTCGCCT CCCCCTCCCC NAATCGGTG AATCCNCCGC CGCTAACAAA	660
CCCCGAAATC CTATTCNCTG AACGCNCCGG CCGCCNCCNG TTGCCCAAAN TNGCCTTNTT	720
CCTTTCNCT TTGTTTNAAN AAAAATCCC CNTTGTTCCT TCCAANCGGG NAGGAACCCC	780
CNAATGGAAA CCTTNCAAA	799

(2) INFORMATION FOR SEQ ID NO: 39:

(i) SEQUENCE CHARACTERISTICS:

(A) LENGTH: 786 base pairs

(B) TYPE: nucleic acid

(C) STRANDEDNESS: single

(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-U128

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 39:

GGCACGAGGA AACGTCTCTC CCTCTCTCCA CTTCTCACAC CCCC GCCCCC GACTCAGCGA	60
ATCGACATTC TTGGCGTGTC AAGGAAACCT TTCTTTTATT TGCGAAGGAA CATGAGCAAT	120
ACTGTTGGAC ACACCTTACC CCAGCAAGCT CTTTACCGGC CTTCTATCAA AGAAAATCAA	180
AGTAAAGCTC ATCAAGGAGT TTCTGCAAAC TTCTGTGTG GAGTTCCATT AGGATCTAAG	240
GTGGAAAATG CAGTGTGATA CAGCTCTAGG TCACTGCTTT CAACCGGATC CCTGGGAAAG	300
AAACTCATCA AAGGAATCCC ACCAAAGCAA AATCCAAGCA TAGTCACTAT GACCCCTCGT	360
GCTGTGTTGG CTGCANATCC TGCTTCAGAG CTAAGGAGAA AATTCAAGCT TGACACAAAT	420

TCTGAATTGG AGGTTGTTGT TCATGTCCCT ACTTCGGGGT CTCCTGTNCA GATTGAATTT 480
CAAGTNACTA ACAGCAGTGG CTAATTGGTG CTTCNTTGGG GTGCAATTCA TAATANAAGG 540
AATAACTGGT CACTTCCTTC TCGTCATCCT GATGGAACAA AAGTTTNCN AAACCCGAAC 600
TCTCANGANA CCTTTTAAAA AATCTGGTTC CCCATCNTCC GTNAAAATGG AGATTGATGA 660
TCCTGAAATA CCAGCAGTNG AATTTCTCCT TANTTTTGN ACAAATNCTC AAAAAACCN 720
AAATTGGGTT TTAAAACNA TTAATGGGTC CCNAAATTTC CNTGTTCCNN TTTTTTTANA 780
AACAAG 786

(2) INFORMATION FOR SEQ ID NO: 40:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 804 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-D4

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 40:

GGCAGGAGAG ATAGCTGAAG TGACGTGAGG TGAATTCGAT TAGATCGAGA GAAATTTCTT 60
TGTGATTTTT GTGGACAATT CTCAATGGCT GCTGTAACAA ANTCACAATT CATCTCGAAA 120
GGCTCATGCG CTGGCTATGG GGGTGTCTGC GACTCGGAGC CAAGGACCTT CCTAAACAGA 180
AGGGTTCTAC ACTTGAGGAA CCAAACCACC GCTTACGAAG GATTGAGATC TCGAAATGTG 240
GTTGATTTGA TTCAGATGCC GTCTAATGCC AAGGTGATTT CAAGGAAAAC TGTGAGGGGA 300
ACTCAGAATC CTAGTCGTAN ACCTTGGGCT GTTGTCATTT GTGGAAAAGG GATGAACATA 360
GTCTTTGTCTG GCGCTGANAT GGCTCCCTGG AGTAAAACCG GANGGACTCG GTGATGTTCT 420
TGGAGGACTG CCACCGGCCA TGGCTGCAAA TGGACACAGA NTGATGACTA TAGCTCCACC 480
CTATGATCAG TACAAGGATG GGTGGGATAC AAATGTCCTG GCTGAATTAA AAGTTGGAAA 540
TGAAATTGAA ANAATCCGCT TTCTTCCACT GCTATAAAAA AAGAATTGAC AGGGTTTTC A 600
TTGATCACCT TTGTTTCTTG AAAANGTGTT GGGAAAAACT GGAAGAATGA AATTTTGGTC 660
CTNTCCCCGG AACTGATTTT NAAAAACANC CCCTAAANTT TANCCTTTN TNCCNGCCN 720
CTTTTGGAAT CTCCCNCGAT NCTGGTTTTT TNCCACCCCC NAAAANTTTC CTNGAACCTN 780
TGGGGGAAAN TTTTTTTTTT TTTT 804

(2) INFORMATION FOR SEQ ID NO: 41:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 826 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-D10

5

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 41:

10	GGCACGAGAG ATAGCTGAAG TGACGTGAGT GGACAATTCT CAATGGCTGC TGTAACAAAG	60
	TCACAATTCA TCTCGAAAGG CTCATGCGCT GGCTATGGGG GTGTCGTCGA CTCTGAGCCA	120
	AGGACCTTCC TAAACAGAAG GGTCTACAC TTGAGGAACC AAACCACCGC TTACGAAGGA	180
15	TTGAGATCTC GAAATGTGGT TGATTTGATT CAGATGCCGT CTAATGCCAA GGTGATTTCTG	240
	AGGAAACTG TGAGGGGAAC TCAGAATCCT AGTCGTANAC CTTGGGCTGT TGTCATTTGT	300
20	GGAAAAGGGA TGAACATAGT CTTTGTCTGGC GCTGANATGG CTCCCTGGAG TAAAACCGGA	360
	GGACTCGGTG ATGTTCTTGG AGGACTGCCA CCGGCCATGG CTGCAAATGG ACACAGAAGT	420
	GATGACTATA GCTCCACGCT ATGATCAGTA CAAGGATGGG TGGGATACAA ATGTCCTGGC	480
25	TGANTTAAAA GTTGGAAATG AAATTGAAAG AATCCGCTTC TTCCACTGCT ATNAAANAAG	540
	AATTGACAGG GTTTTCATTG ATCATCCTTT GTTTTCTTGA AAANGTGTTG GGAAAACTG	600
30	GANGAATGAT ATNTGGTCCT GTCCCNGGAA CGGATTATTN AAAACCACCC NCTTAANATT	660
	TACCCTTTTG TGCCCANGCA NCNTTGGGAA NCTCCCAAGG ATTCTGGATN TTTAACNACN	720
	NCCNAATACT TTTCTGGGAA CCATTTNGGG GANAANNTTG TTNTTGTGTTG CNAATTAATT	780
35	GGCNCCTGG TCCTCTNCC TGCTACTTAA AAATTTTNTT TCNTNT	826

(2) INFORMATION FOR SEQ ID NO: 42:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 813 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

45

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-D13

50

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 42:

55	GGCACGAGCT GAGGGAGTGA GGGAAAGAGA TAGCTGAAGT GACGTGAGGT GACTTCGATT	60
	AGATCGAGAG AAATTTCTTT GTGATTTTGG TGGACAATTC TCAATGGCTG CTGTAACAAA	120
60	GTCACAATTC ATCTCGAAAG GCTCATGCGC TGGCTATGGG GGTGTCGTCG ACTCGGAGCC	180
	AAGGACCTTC CTAAACAGAA GGGTTCTACA CTTGAGGAAC CAAACCACCG CTTACGAAGG	240
	ATTGAGATCT CGAAATGTGG TTGATTTGAT TCAGATGCCG TCTAATGCCA AGGTGATTTCT	300
65	AAGGGAAAAC TGTGAGGGGA ACTCAGAATC CTAGTCGTAG ACCTTGGGCT GTTGTCATTT	360
	GTGGAAAAGG GATGAACATA GTCTTTGTCTG GCGCTGANAT GGCTCCCTGG GAGTAAAACC	420
	GGAGGACTCG GTGATGTTCT TGGAGGACTG CCACCGGGCC ATGGCTGCAA ATGGACACAG	480
70	AAGTGATGAC TATAGCTCCA CGCTATGATC AGTACAAGGA TGGGTGGGAT NCAATGTCC	540

TGGCTGAATT AAAAGTTGGG AAATGAANTT GAAAGAATCC GCTTCTTCCA CTGCTATAAA 600
ANAAGAATTG ACAGGGTTTT CATTGATCAC CTTTGTCTT GAAAAGGTGT GGGGAAAAAC 660
TGAAGAATG ATATTTGGTC CTGTCCCNGG ACTGATTNA AACACCACC TAAAATTACC 720
TTTTGTNCCN GCNNCTTTGG AACCNCCCNG GATCTNGATN TTANCACCCC CAANTCTTAT 780
CCTGGAACCT TTGGGGNAAA NTTTGTNTTT GTT 813

(2) INFORMATION FOR SEQ ID NO: 43:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 805 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-D66

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 43:

GGCAGAGAA GAGATAGCTG AAGTGACGTG AGTGGACAAT TCTCAATGGC TGCTGTAAACA 60
AAGTCACAAT TCATCTCGAA AGGCTCATGC GCTGGCTATG GGGGTGTCGT CGACTCGGAG 120
CCAAGGACCT TCCTAAACAG AAGGGTTCTA CACTTGAGGA ACCANACCAC CGCTTACGAA 180
GGATTGANAT CTCGAAATGT GGTGATTG ATTGAGATGC CGTCTAATGC CAAGGTGATT 240
TCAAGGAAA CTGTGAGGGG AACTCACAAT CCTAGTCGTA NACCTTGGGC TGTTGTCATT 300
TGTGGAAAAG GGATGAACAT AGTCTTTGTC GGCGCTGAGA TGGCTCCCTG GANTAAAACC 360
GGAGGACTCG GTGATGTTCT TGGAGGACTG CCACCGGCCA TGGCTGCAA TGGACACACA 420
GTGATGACTA TAGCTCCACG CTATGATCAG TACAAGGATG GGTGGGATAC AAATGTCCTG 480
GCTGANTTAA AANTTGGAAA TGAAATTGAA AAGANTCCGC TTCTTCCACT GCTATAAAAN 540
AAGAATTGAC AGGGTTTTCA TTGATCATCC TTTGTTTCTT GAAAAGTGT GGGGAAAAAC 600
TGGGAAGAAT GATATNTGGT CCTGTCCCNG GAACTGATTA TAAAACACCA GCTAANATTA 660
CCTTTTGTG CCAGCAACTT TGAACCCCN AGGATTCTGG ATNTTACAAC ACNAATACTA 720
TTCTGGAACA TTTGGGGAAA AATTGTTTTT GTNCCAATG ANTGGCNCAC TGGTCCCNCT 780
CCTNCCTACT TAAAAANTTT TTTCC 805

(2) INFORMATION FOR SEQ ID NO: 44:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 790 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-D111

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 44:

5 GGCACGAGAA GAGATAGCTG AAGTGACGTG AGTGGACAAT TCTCAATGGC TGCTGTAACA 60
AAGTCACAAT TCATCTCGAA AGGCTCATGC GCTGGCTATG GGGGTGTCGT CGACTCTGAG 120
CCAAGGACCT TCCTAAACAG AAGGGTTCTA CACTTGAGGA ACCAAACCAC CGCTTACGAA 180
10 GGATTGAGAT CTCGAAATGT GGTGATTTG ATTCAGATGC CGTCTAATGC CAAGGTGATT 240
TCGAGGAAAA CTGTGAGGGG AACTCAGAAT CCTAGTCGTA GACCTTGGGC TGTTGTCATT 300
15 TGTGGAAAAG GGATGAACAT AGTCTTTGTC GGCCTGANA TGGCTCCCTG GAGTAAAACC 360
GGAGGACTCG GTGATGTTCT TGGAGGACTG CCACCGGCCA TGGCTGCAA TGGACACAGA 420
GTGATGACTA TAGCTCCACG CTATGATCAG TACAAGGATG GGTGGGATAC AAATGTCCTG 480
20 GCTGAGTTAA AAGTTGGAAA TGAAATTGAA AGANTCCGCT TCTTCCACTG CTATAAAAGA 540
AGANTTGACA GGGTTTTTCAT TGATCATCCT TTGTTTCTTG ANAAGGTGTG GGGAAAAACT 600
25 GGAAGAATGA TATATGGTCC CTGTCNCAGG AACNGATTAT GAANACAACC AGCTAAGATT 660
AACCTTTTGT TGCCAGCACT TTGGGAACCN CAAGGATCCT GGATCTTAAC AACNCAANTC 720
TATTCTGGAC CATATGGGGA CAAATTGTTT TGTTGCAAT GATGGCACCT GTCCNNTCC 780
30 ATGCTACTTA 790

(2) INFORMATION FOR SEQ ID NO: 45:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 813 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-D112

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 45:

50 TTTTTTTTTT TTTTTTTTTT GAGCATAATA GCAATTTATT CAGGAGGATC AAACCTCAAAC 60
ACTATAACAT AGACAGTAGT CACTTTCAGG GAGTGGCCAC ATTTTCCTTT GCAAGAGGAG 120
55 CTATTTTCATC AGCATCGATG CCGGCTTCAC TACCAGCAGC TCCTAAGCTT AGGANAAATT 180
GCTCCCACTT CTTAGCAGGT CCCTTCCAGG AGAGGTCTTG AGTCATGCAG TTCTGTATCA 240
60 TCTCAGCAA TGCAGGTGTG CCGTAACTT TAAGGGCCCT TTTCACTGTC TGAATGACTT 300
TTGTACATC ATCTTTATCG ACAACATCAC AATCAGGATT GAAGGGACCC ATATGAAACC 360
CTGTGATGCC TTCTATGACA GTGTCAGCAA GTCCACAGT TGTTGCGCAC ATGGGGGGAA 420
65 TTCCATATCG CATGCCCTGA AAGCTGGATA AGGCCACAAG GTTCGAATCT GCTGGTAAGA 480
NCAAGAAGAT CTGCTCCAGC CATGATTTC TGANCCAAAG GTGCATTAAA CTTCATATGT 540
GCTCTCACTT TATTGGGAAA CATATCTTCA AGTTGTGCAA GCTGACGCTC CAACANCTTC 600
70 TCCCANTACC AAGCACTATC ACTTGAACAT TTTCATCAAT GAATTCAGGA ATAACCTGCNG 660

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CGAAAATATC CGAACCTTTC TGCTCTCTAA TCTCCCTATA AAGGNTATAA CAGGGATTTC 720
CNGTCAACAG GTTAACCAAA TTCAACTTGT TAGGNTTCCC TTAATCCAAA GGTTCACACC 780
CNNCCCATTT GTTGCTCNTA ATTGANAAAA ATT 813

(2) INFORMATION FOR SEQ ID NO: 46:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 808 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-D39

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 46:

GGCAGGAGCG AGTTTTTTTT TTTTTTTTTT GCTGTGATGA TATTATGCAT CTTATTAGTT 60
GGTTGCACCA CTTCTATTAC ATCACTCAAC AGTATTAGCC CAAGANAAGG CTAATACCTT 120
CNCATCACTC TTGACATCTT ATTTGTATTG TAGGANACTA GTATATATAT CTATATGCGT 180
GGTTGCCTGC ACNAGGGCGG CTTATTAGTG GCGTCAGTGA TCTCAAGGGC AGAANACAAC 240
CCTGTANTTG GTGCCGCCGG GGCAGGTGAA GGTGCTCGTC TGATCGTCCT TGGGATANCT 300
GTAGGCGTCG GGGCAGTTTC TCTTGAANAA CCGGGAGTAT TCGGTCGGGC TGCAGCTGCC 360
GGAGTTGCAA CAGTACTGGT CCGTCTTGAA CACGGTGAG GGGTTGTTGC ANCCGCCCGG 420
CGCCTTCANC GCCCCGGGGC ACTGCCCGTT GATNTCCGCC GCGCACCGGA TGCCGCGGCA 480
NCCGCTGAC NTGGGGCTNA ATCCCATTGG CACGTTGAAA CCGTCNACCA AGGGAAATTT 540
CAAAAAATCC AAGTTGTTGA ACTGGTTGAA CGCCAACTCC NCCAGGGTNT TGGGCCGGTT 600
GECNTACCCC GTGCATNACA ACACCCCGCC GCANTCCCCT TCTGGCACCG CCGCNTCCGC 660
TCCCCTCAAA AGAACACCCG TGCGGCCCAA AATCCGGNCC CCCGGTGGTT CCCCTTTTCN 720
CTTTAANGGT CCCCAATGCC CTTGNTTTAA CTGNCTCCCC CCCANGCNCG GCCCCGGGCC 780
ACNCTTTNTT AAAACATCNG TNCCNAAT 808

(2) INFORMATION FOR SEQ ID NO: 47:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 809 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-D50

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 47:

GGCACGAGTG TGCCTAACAG AGAAAGAGAG ACCGATAGCC TCCTCATTCA CTATGGCGAT 60
CCGATCGCCA GCTTCGCTGC TGTTATTTGC GTTCTGATG CTTGCGCTCA CAGGAAGACT 120
5 GCAGGCCGGG CGCAGCTCGT GCATTGGCGT CTACTGGGGA CAAAACACAG ACGAGGGAAG 180
CTTAGCAGAT GCTTGTGCCA CAGGCAACTA CGAATACGTG AACATCGCCA CCCTTTTCAA 240
10 GTTTGGCATG GGCCAACTC CANAGATCAA CCTCGCCGGC CACTGTGACC CTCGGAACAA 300
CGGCTGCGCG CGCTTAAGCA GAGAAATCCA GTCCTGCCAG GAGCGTGGAG TCACGGTGAT 360
GCTCTCCATC GGAGGTGGCG GGTCTTATGG CCTGAGTTCC ACCGAAGACG CCAAGGACGT 420
15 GGCGTCATAC CTCTGGCACA GTTCTTGGG TGGTTCTGCT GCTCGCTACT CTCGACCCCT 480
CGGGGATGCG GTTCTGGATG GCATANACTT CAACATCNCC GGAGGGAGCA CAGAACACTA 540
TGATGAACTT GCCGCTTTCC TCAAGGGCTA CNACGAACAG GAAGCCGGAA CGAAAAAANT 600
20 TTTACTTGAA TGCTGCTCCC NCANTGTCCT TTCCCGGATT ACTGGCTTGG CACCCACTCA 660
NAAAAATCT CTTCNACTT CCNTGTGGGT TGCANTTCCT CCAANAACCC TTCCTTGCCN 720
25 TTTCTCCCCA AAACCTATCC ATCTTGCAAT TCCTTTCACA AATTGGGTCTN TNTCCNTCCC 780
NGCCCCNAAA ACTTTTTTCCC TNGGGCTCC 809

(2) INFORMATION FOR SEQ ID NO: 48:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 809 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-D86

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 48:

GGCACGAGCC ACAAGCTTGC CTTTGGTTGT GCCTAACAGA GAGAGAGAGA GAGACAGACC 60
GATAGCCTCC TCATTACTA TGGCGATCCG ATCGCCAGCT TCGCTGCTGT TATTTGCGTT 120
50 TCTGATGCTT GCGCTCACAG GAAGACTGCA GGCCCGGCGC AACTCATGCA TTGGCGTCTA 180
CTGGGGACAA AAGACAGACG AGGGAAGCTT AGCAGATGCT TGTGCCACAG GCAACTACGA 240
55 ATACGTGAAC ATCGCCACCC TTTTCAAGTT TGGCATGGGC CAAACTCCAG AGATCAACCT 300
CGCTAGCCAC TGTGACCCTC AGAACAACGG CTGCGCGCGC TTAAGCAGCG AAATCCAGTC 360
CTGCCAGGAG CGTGGAGTCA AGGTGATGCT CTCCATCGGA GGTGGCGGGT CTTATGGCCT 420
60 GAGTTCCACC GAAGACGCCA AGGACGTGGC GTCATACCTC TGGCACAGTT TCTTGGGTGG 480
TTCTGCTGCT CGTACTCTC GACCCCTCGG GGATGCGGTT CTGGATGGCA TAAACTTCAA 540
65 CATCNCCGGA GGGAGCACAG AACACTATGA TGAACCTGCC GCTTTCCTCA AGGGCTACAA 600
CGANCAGGAA GCCGGAACGA AAAAAGTTCA CTTGAATGCT GCTCCCCANT GTCTTTCCCG 660
GATTACTGGC TTGGCAACGC NCTCCAAAAC AAATCTCTTC CACTTCCTGT GGGTGCANTC 720
70 CTCCACAAAC CTTCTGTCAT TCTCCCCAAA CCTATCAATC TTGCNAAATG CGTTCAACAA 780

TTNGGGTCTT TTCATCCCCG CCCAAACT

809

(2) INFORMATION FOR SEQ ID NO: 49:

5

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 785 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

10

(ii) MOLECULE TYPE: cDNA

15

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-D90

20

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 49:

GGCAGGAGGA GAGACCGATA GCCTCCTCAT TCACTATGGC GATCCGATCG CCAGCTTCGC 60
TGCTGTTATT TGC GTTTCTG ATGCTTGCGC TCACAGGAAG ACTGCAGGCC GGGCGCAGCT 120
25 CGTGCAATTGG CGTCTACTGG GGACAAAACA CAGACGAGGG AAGCTTAGCA GATGCTTGTC 180
CCACAGGCAA CTACGAATAC GTGAACATCG CCACCCTTTT CAAGTTTGGC ATGGGCCAAA 240
30 CTCCAGAGAT CAACCTCGCC GGCCACTGTG ACCCTCGGAA CAACGGCTGC GCGCGCTTAA 300
GCAGAGAAAT CCAGTCCTGC CAGGAGCGTG GAGTCACGGT GATGCTCTCC ATCGGAGGTG 360
GCGGGTCTTA TGGCCTGAGT TCCACCGAAG ACGCCAAGGA CGTGGCGTCA TACCTCTGGC 420
35 ACAGTTTCTT GGGTGGTTCT GCTGCTCGCT ACTCTCGACC CCTCGGGGAT GCGGTTCTGG 480
ATGGCATANA CTTCAACATC GCCGGAGGGA GCACAGAACA CTATGATGAA CTTGCCGCTT 540
40 TCCTCAAGGC CTACAACGAG CAGGAAGCCG GAACGAAAAA AGTTTACTTG AATTGCTGCT 600
CCGCANTATC CTTTCCNGAT TACTGGCTTG GCAACNCNCT CCAAAAAANA TCTCTTCCAC 660
TTCCTGTTGG GTGCAGTTCT TCCAANAACC CNTTCNTGCC ATTTCTCCCC AAAACGCTTT 720
45 CCATCTTTGC AAATGCCTTT CAACAATTGG GGTCTGTTC CNNCCCTGCC CCAAAAAGT 780
TTCCT 785

50

(2) INFORMATION FOR SEQ ID NO: 50:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 813 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

55

(ii) MOLECULE TYPE: cDNA

60

- (vii) IMMEDIATE SOURCE:
(B) CLONE: U-D93

65

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 50:

GGCAGGAGCG ATAGCCTCCT CATTCACTAT GGCGATCCGA TCGCCAACCT CGCTGCTGTT 60
70 ATTTGCGTTC CTGATGCTTG CGCTCACGGG AAGACTGCAG GCCCGGCCCA GCTCATGCAT 120

TGGCGTCTAC TGGGGACAAA ACACCGACGA GGGAAGCTTA GCAGATGCTT GTGCCACAGG 180
CAACTACGAT TACGTGAACA TCGCCACCCT TTTCAAGTTT GGCATGGGCC AAATCCAGA 240
5 GATCAACCTC GCCGGCCACT GTGACCCTCG GAACAACGGC TGCGCGCGCT TGAGCAGCGA 300
AATCCAGTCC TGCCAGGAGC GTGGCGTCAA GGTGATGCTC TCCATCGGAG GTGGCGGGTC 360
10 TTATGGCCTG AGTTCCACCG AAGACGCCAA GGAAGTAGC GTCATACCTC TGGCACAGTT 420
TCTTGGGTGG TTCTGCTGCT CGCTACTCGA GACCCCTCGG GGATGCGGAA CTGGATGGCA 480
TANACTTCAA CATCGCCGGA GGGAGAACAG AACACTATGA TGAAGTTGCC GCTTTCCTCA 540
15 AGGCCTACAA CGANCAGGAA GCCGGAACNA AAAAAGTTCA CTTGAATTGC TGCTCCGCAG 600
TGTCCTTTCC CGGATTACTG GCTTGGCAAC GCACTCAGAA CANATCTCTT CNACTTCCTG 660
TGGGTGCAAT TTCCTCCACA ANCCTTCNT GCCATTTCTC CCAAAAAGCT ATCNATCTTG 720
20 CAAATGCGTT CNACAATTGG GTCTTTTCCA NCCTGCNCAA AACTGTTCTT TGGGCTCCCG 780
CTGCCCTGA AGGTGCNCCA ATTGGTGGCT NCT 813

(2) INFORMATION FOR SEQ ID NO: 51:

- (i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 819 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-D61

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 51:

GGCACTCAGG AACTCCAACA TCCAAGTCCT GTTGGATGTC CCCCAGTCCG ACGTGCAGTC 60
45 ACTGGCCTCC AATCCTTCGG CCGCCGGCGA CTGGATCCGG AGGAACGTCG TCGCCTACTG 120
GCCCAGCGTC TCCTTTTCGAT ACATAGCTGT CGGAAACGAG CTGATCCCCG GATCGGATCT 180
50 GGCGCAGTAC ATCCTCCCCG CCATGCGCAA CATCTACAAT GCTTTGTCCT CGGCTGGCCT 240
GCAAAACCAG ATCAAGGTCT CGACCGCGGT CGACACGGGC GTCCTCGGCA CGTCCTACCC 300
TCCCTCCGCC GGCGCCTTCT CCTCCGCCGC CCAGGCGTAC CTGAGCCCCA TCGTGCAGTT 360
55 CTTGGCGAGT AACGGAGCGC CGCTCCTGGT CAATGTGTAC CTTATTTTA GCTACACCGG 420
CAACCCGGGA CAGATCTCGC TGCCCTACGC CCTGTTACG GCCTCCGGCG TCGTCGTGCA 480
60 GGATGGGCGA TTCANCTATC AGAACCTGTT CGACGCCATC GTCGACGGG TCTTCGCGGC 540
GCCTGGAAAA AATGGGAAGG GCGAACGTGG CGGTGGTGGT GTCCGAAAAC GGGTGGCCGT 600
CCGCGGGCGG AAGAACCNA AACNAACACC ANCAACNCCG CCGGAANTTT CAACCANAAC 660
65 TTGATCAGGC ATGTTNGGCG GAAGAACCCC AAGGAAAACC AGGGAAGGAA ATCAAGGCTT 720
CNTNTTCCAA AANTTTCCAC CAAAACCNA AAGGTGGANG GATCCAACAA AACTTTGGCC 780
70 TGTTTTATCC CAANNAACAN CCCNTCTTAC CNAATAACT 819

(2) INFORMATION FOR SEQ ID NO: 52:

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(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 794 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
 (B) CLONE: U-D63

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 52:

GGCACGAGGG ATTATAAAAA GAAACTCGCA CTCAGCCAGA TTGACTCAAG CATGAAGGTT	60
GCATCTTTCG AATGTTCCCTT TTTTTCCTCA CATCTTTTGA ATGTTACATG ACAATCATGA	120
CGCCGTGCAT ACAATGATAC CTCTGATAGG GTTGAATGCA CAAACCACTC ATCGTGCTAT	180
ATTGCAAGTG CTTATGTTTG TATTCATTTT CTTATAATTT CAATGTGAGA GTTACCTTAG	240
GTTTCATATTA NATTTATATA ATATTGGGCA TAGATTTTTT TGTCAATTGT TGTGATCTGC	300
AATTTCATTA GGTTCATCGAC CATATTATGG TAAATTTAAT TTAATAAATT ATATCTTGAG	360
TTTATTGCTT TGCATATTTT GTGCTGGAAA CCATGCCAAT CCAACTCCTT TGCAAAACTT	420
AAGATAATTA AAGGAGATAT TGAGGATGCC GACTGCTTTA GGTTATTTGC ATTANACAAT	480
AAACGCCCCGT GAAATGGAAA TCATGCAAAG CTTTGCATGG AGAATATGTT NATAGAGATA	540
GACATGAAGA CATGAATATG CTTTCTTGAT GAACAACGAT GTTCACNTGT TTAATGCATG	600
CATGATACAT CCAATGTTCT AGGCTTGTTG GCAATCATTT TATTCNAAAA ATTGTCTGTT	660
TCTCTNCCNC CATAAGGTTA GCTTGTGGAA AATGTTCAAC TTTGGGCNCA NATGATCCGT	720
TTTAGCAAAA TCCNCCATT CCTATTTTTT TCCGGAATCC NNTTGGNAAA ANATCCTNAC	780
ATACTATTTC CACA	794

(2) INFORMATION FOR SEQ ID NO: 53:

(i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 798 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
 (B) CLONE: U-D65

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 53:

GGCACGAGGC CCGTAGAGCG AGTGCTGAGA TGGCTTTGAG GGCCTTCTTC CCCCTCTGCA	60
TCGCTCTCGT GGTGACGCTC TCACCTCTGT GTGATGCCAC TTCGCCTTAC TACACCATCA	120
CACCGCCAC CCGCTGGCC AAGCCGCCTT CAGTTGAACC ACCACCCTAC CACGGCCCTC	180
CGACGACCCA CCCTAAGCCA CCGAGTCATG GTGGCCAACC TCCGTCCCAC CATCACCCTA	240

CACCAATCTA CGGTGCACCC CCTCCGCAAC ACCACCACCA CCACCAACAC CACCACCAAC 300
 CTGCACCACC AACTCACGCA GAACACCCTC CGTACTACCA CATGCCTTCC CCGCCGCCGC 360
 5 ATGGCCAGCA CCCGTACCA CCGTCACATG ATTATCCCGT ACCTCCTGCT CACAAGCCCC 420
 GAACTCCGCC GCCGGTTTAC AAGTCTCCAC CACCGACCCA CCGTCCTTAC CCTCCATCGA 480
 10 CGCCACCCCA CCATCCGACG CACCCGCCTT CTCAGCCGAC GCCGTCATAC AAGGCCCCGC 540
 CACCATACAA GAACATCCCT GANCATCTCC ACCGCCGCGT CACTATCATT CTCCGTCTTC 600
 ACCACCANCA CAACCACCAT NCAATAGTC TCGTTTGCAT CTCTCCGTTG AANATGAACC 660
 15 AATGTCNNTT AATAACGATC AGGGTTTCAA ATAAAAACNA ATTTCCGCCA TTGTAATGCT 720
 ATGGTTGTTC TCTCTGCTTC CCGGGGAAAG TTTCTTGGGT CATNTTAACC NCCTCCTAAT 780
 GTTCNGCTCT TNNTANAA 798

(2) INFORMATION FOR SEQ ID NO: 54:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 824 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:

- (B) CLONE: U-D84

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 54:

GGCACGAGCG CCCACCCCGG TGGCCAAGCC GCCTTCAGTT GAACCACCAC CCTACCACGG 60
 CCCTCCGACG ACCCACCCTA AGCCACCGAG TCATGGTGGC CAACCTCCGT CCCACCATCA 120
 CCAACACCA ATCTACGGTG CACCCCTCC GCAACACCAC CACCACCACC AACACCACCA 180
 45 CCAACCTGCA CCACCAACTC ACGCAGAACA CCCTCCGTAC TACCACATGC CTCCCCGCC 240
 GCCGCATGGC CAGCACCCGT CACCACCGTC ACATGATTAT CCCGTACCTC CTGCTCACA 300
 GCCCCGAACT CCGCCGCCGG TTTACAAGTC TCCACCACCG ACCCACCCTC CTTACCCTCC 360
 50 ATCGACGCCA CCCACCATC CGACGCACCC GCCTTCTCAG CCGACGCCGT CATAAAGGC 420
 CCGCCANCA TNCNAGACCA TCCCTTGAGC ACTTCTCCAN CGNTTGCGTT TATTATCATT 480
 55 CTCCGTCTTC ACCACCACCA CCACCAACAT ACAAATAGTC TCGTTTGCCA TCTCTCCGTT 540
 GAAGATGACG CAGTGTCGTT TTAGTAGCGA TCAGGGTTAC CAATAAGAAC GATGTTGCCG 600
 CCATTGTAAT GGCTATGGTT GTTCTCTCTG CTTTCCGGG GGAAGGTTCT TTGGGTTCAT 660
 60 GTTAAACCTC TCTCTTAAAT GTTCATGCAT CTTATTATAA ACNAAAATTG GCCATTTNNN 720
 NNNTNTNTN NNNNTTNNN NNNNNAAAAC TCNAAAATA TTTTAAAAA CGGGCGGGGG 780
 65 GCCCATCNAT TTTCCNNCCC GGGTNGGGGN TCCAGNTTA TTNT 824

(2) INFORMATION FOR SEQ ID NO: 55:

- (i) SEQUENCE CHARACTERISTICS:
- (A) LENGTH: 797 base pairs
 - (B) TYPE: nucleic acid

(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-D75

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 55:

5	GGCACGAGGG TTACGATCGT CATGTTGGGG GTGTTACAGG GGNAGGTGG TGGAGGTGCC	60
15	GGCGGAGCTG GTGGCCGCCG GCAGCAGGAC GCCGTCCCCT AAGACACGAG CGTCGGAGCT	120
	GATCAACCGA TTCCTCGGGA GCTTCGCTCC CGCGGTGTCG ATCCAGATCG GGGACTTGGG	180
20	ACACCTCGCC TACTCCCACG CCAACCAGTC CCCCTTCGCT CCCAGGTTGT TTGCAGCGAA	240
	GGACGANATT TACTGCCTCT TCAAGGGAGT GCTGACCAAC CTGGGCAGCT TGAGGCAGCA	300
25	GTATGGGCTT TCCAAGAGTG CCGACNAGGT GGTGCTGGTC ATCGAAGCCT ACAAGGCCCT	360
	CCGTGACCGA GCTCCCTATC CTCCCAGCTT CATGCTCGCA CACCTTACTG GCAACTTCGC	420
	CTTCGTGCTC TTCGACAAGT CCACATCATC CATCCTTGTT GCATCTGACC CANATGGAAN	480
30	ANTACCCTTG TTCTGGGGGA TCACTGCANA TGGATGCCTT GCCTTTGCTG ACNATCTANA	540
	CTTGCTGAAG GGATCGTGCG GGAAGTCACT TGCACCATTC CCTGAAGGAT GTTACTATTC	600
35	CAATGCCTTG GGGGGCCTGA AAANCTATGA AAACCCCAAC ACAAGGTGAA CTGCTGTTTC	660
	TTGAANATGA AGAANAATTN TTTGTGCCNC TTTCAAGGTG GAANGATCTG CCNTTCTTGC	720
	GGNAACCCCC TAATCAAGGA ACATCTTCCA ATGTTTGGGG CNAATGATCC TCTTAAATC	780
40	CTAAAATTCT TGGAATT	797

(2) INFORMATION FOR SEQ ID NO: 56:

(i) SEQUENCE CHARACTERISTICS:

45 (A) LENGTH: 804 base pairs
(B) TYPE: nucleic acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: unknown

50 (ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
(B) CLONE: U-D83

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 56:

60	GGCACGAGCT TCCACACAGG TGAGGGTAAG TCGGTTACGA TCGTCATGTT GGGGGTGTTC	60
	AGCGGGGAGG TGGTGGAGGT GCCGGCGGAG CTGGTGGCCG CCGGCAGCAG GACGCCGTCC	120
65	CCTAAGACAC GGGCGTCGGA GCTGATCAAC CGATTCTCG GGAGCTTCGC TCCCGCGGTG	180
	TCGATCCAGA TCGGGGACTT GGGACACCTC GCCTACTCCC ACGCCAACCA GTCCCCCTTC	240
	GCTCCCAGGT TGTTTGAGC GAAGGACGAN ATTTACTGCC TCTTCAAGGG AGTGCTGACC	300
70	AACCTGGGCA GCTTGAGGCA GCAGTATGGG CTTTCCAAGA GTGCCGACNA GGTGGTGCTG	360

5 GTCATCGAAG CCTACAAGGC CCTCCGTGAC CGANCTCCCT ATCCTCCCAG CTTCATGCTC 420
 GCACACCTTA TTGGCAACTT CGCCTTCGTG CTCTTCGACA AGTCCACATC ATCCATCCTT 480
 10 GTTTGCATCT GACCCANATG GAAAAATGCC CTTGTTCTGG GGGATCACTG CANATGGATG 540
 CCTTGCCTTT GCTGACNATC TANACTTGCT GAAGGGATCG TGCGGGAANT CACTTGCACA 600
 TTCCCTGAAN GATGTTACTA TTCCAATGCC TTGGGGGGGC TGAAAANCTA TGAAAACCCA 660
 15 ANCACAAGGT GACTGCTGTC TTGAANATAA AGAAAAATTT TTTGTGCCCC TTTCAAGGTT 720
 GAANGATCTG CATTCTTGCG GCACCCCTN ATCNAGGAAC NTCNTNCCAA TGTTGGGGCA 780
 AATATCCTCT TTAANAACAT AAAA 804

(2) INFORMATION FOR SEQ ID NO: 57:

- (i) SEQUENCE CHARACTERISTICS:
 (A) LENGTH: 803 base pairs
 (B) TYPE: nucleic acid
 (C) STRANDEDNESS: single
 (D) TOPOLOGY: unknown

(ii) MOLECULE TYPE: cDNA

(vii) IMMEDIATE SOURCE:
 (B) CLONE: U-D64

(xi) SEQUENCE DESCRIPTION: SEQ ID NO: 57:

35 GGCACGAGGG ATTATAAAAA GAAACTCGCA CTCAGCCAGA TTGACTCAAG CATGAAGGTT 60
 GCATCTTTTCG AATGTTCTT TTTTTCCTCA CATCTTTTGA ATGTTACATG ACAATCATGA 120
 40 CGCCGTGCAT ACAATGATAC CTCTGATAGG GTTGAATGCA CAAACCACTC ATCGTGCTAT 180
 ATTGCAAGTG CTTATGTTTG TATTCATTTT CTTATAATTT CAATGTGAGA GTTACCTTAG 240
 GTTCATATTA GATTTATATA ATATTGGGCA TAGATTTTTT TGTCATTGTT TGTGATCTGC 300
 45 AATTTTCATTA GGTTCATGAC CATATTATGG TAAATTTAAT TTAATAAATT ATATCTTGAG 360
 TTTATTGCTT TGCATATTTT GTGCTGGAAA CCATGCCAAT CCAACTCCTT TGCAAAACTT 420
 50 AAGATAATTA AAGGAGATAT TGAGGATGCC GACTGCTTTA GGTATTTTGC ATTANACAAT 480
 AAACGCCCGT GAAATGGAAA TCATGCNAAG CTTTGCATGG AGAATATGTT NATAGANATA 540
 GACATGAAGA CATGAATATG CTTTCTTGAT GAACAACGAA GTTCACNTGT TTAATGTCATG 600
 55 CATGATACAT CCAATGTTCT AGGCTTGTTA GGCAACCTTT ATCCAAAAAA TTGTCTGTAC 660
 TCTCCCCCAT AAGGTAAGCC TGTGGAAAAT GTTCACTTTG GGCCNNATGA TCAGTTTANC 720
 60 CGAAAATCCC CCTTCNTTAT TTGTTTTCTG AAACNCNTTG GAAANANATT CCTTACATAC 780
 CTTTTTCACN NANATNTTGA ACC 803